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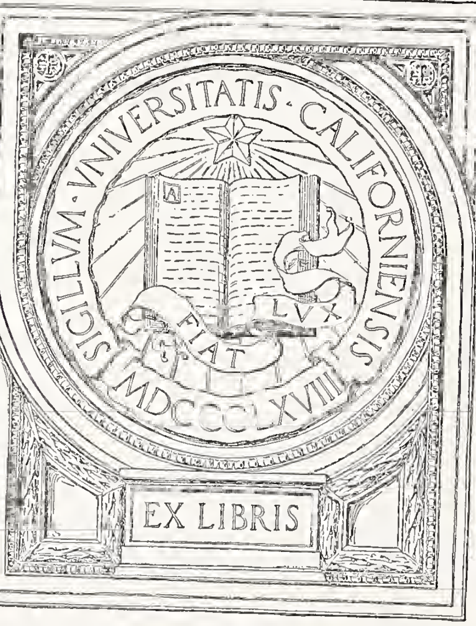

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Connecticut Medicine

Connecticut State Medical Journal

Volume 29 / January 1965 / Number 1

MEDICAL BIOPSY: Morris J. Seide, M.D., *Guest Editor*

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HARVEY AND CIRCULATION OF BLOOD (see page 1)

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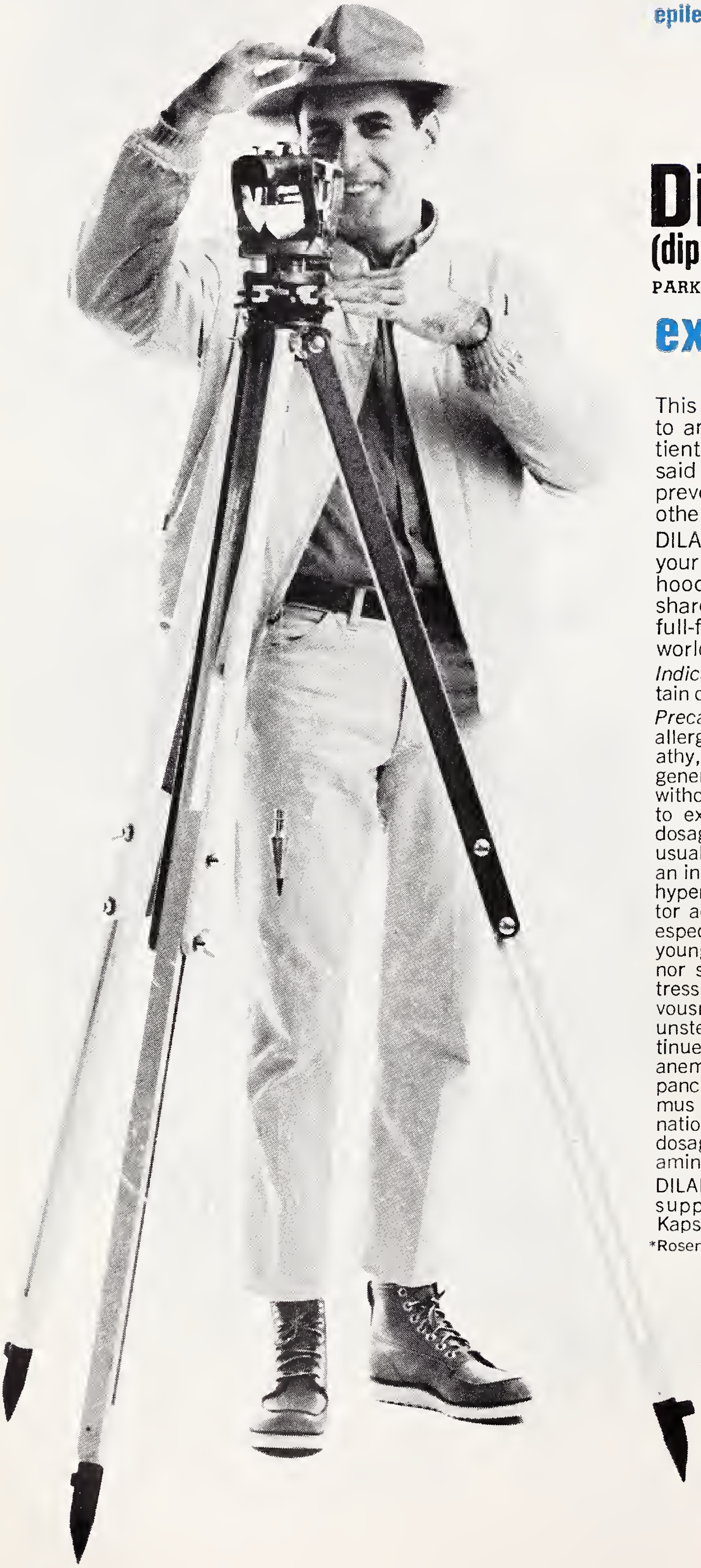

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Connecticut Medicine

editorials

Let Us Find Out

Let me oh Lord by my knowledge discover today what I did not know yesterday because art has no end and because the spirit of man always presses onward.—Maimonides.

In years gone by great studies and great discoveries were recorded and passed on to posterity in small books: Vesalius in Anatomy, Paré in Surgery, Harvey in Circulation, Withering in Therapy and Jenner in Immunology. Now, announcing the results of scientific observation and experiment has been taken over by the periodical literature, which contains most of the new information. In addition, the periodical can analyze and evaluate recent advances in knowledge and in therapeutics, both in its scientific pages and in its advertising pages. Here the Editor stands in the way of counterfeit science and counterfeit drugs.

There are other obligations that medical journalism must strive to fulfill. The Golden Rule of the profession as Garland calls it,[1] the moral principles, the guidelines in the relation between physician and physician, and physician and patient; the limits to which experimentation on man and animals can be carried out; the guidelines of professional etiquette and codes of conduct; in short the practice of medicine in all its ramifications on the highest plane in respect to professional behavior. Some of these ideas may find expression in special articles. Some in editorials where the subjects can be presented and discussed with objectivity. If the writer's position is sound and if the policies of the Journal are respected, the Editor will reap considerable credit, but importantly our image with the scientific community will rise to a respected level and so will our image rise with our advertisers to a level worthy of their increasing support.

Connecticut Medicine, as all journals of standing, tries to serve as an explicit model in the clear and effective use of the written word for the benefit of their readers, some of whom are also writers. Admittedly the maintenance of consistently high standards requires that good material badly presented be rewritten. The Editor has considered it his obligation to point out the faults in the composition. When properly corrected the authors have learned much thereby and invariably expressed their gratitude. Clear writing, proper organization of material and putting it on paper in a form worthy of being included in periodical literature is a valuable educational experience. Authors learn the meaning of an old maxim that the art of writing is in re-writing. Connecticut Medicine therefore has tried to function not merely as a medium of education for its readers but also of its contributors.

In the Journal's pages are found regularly reports of medical progress that is taking place, and information that is accumulating in all divisions of medicine, as well as articles of practical value to the practitioner. It is good for the one who is highly specialized not to lose sight of the central forces of medical education—the sick human being. But the sick human being is a part of society and therefore the physician must know about the workings of social institutions and the processes of social change, "for medicine is no longer dealing only

THE COVER

HARVEY AND CIRCULATION OF BLOOD

WILLIAM HARVEY, slignt, energetic, scientific English physician of the seventeenth century, with his famed pointer in hand, used demonstrations to prove his revolutionary theory of the circulation of blood, during his anatomical lectures before the College of Physicians of London. His book *De Motu Cordis,* published in 1628, upset traditional followers of Galen, brought entirely new concepts of circulation and of anatomy to medicine. Harvey, a graduate in medicine from Padua and Cambridge, physician to Kings James I and Charles I, was unperturbed by criticism, dedicated to research and to hard work. He died in 1657, after having seen his theory generally accepted by physicians.

with isolated phenomena, episodic disease, and individual patients. It does not possess a prescriptive right to solve the ills of mankind unaided. To prevent disease and never to be content with the frustrating exercise of cure" is its ultimate aim.[2]

We work on the assumption that we will all be life-long students of medicine. Out of the untold number of journals at hand, the physician in his pursuit of continuing education, can at best resort to no more than a few. Your Editorial Staff hopes that Connecticut Medicine will be one of these regardless of how diversified the physician's need may be. Whether we discuss socio-economic problems in medicine or rapid scientific advance, or the wonders of genetics and molecular biology, the conquests of immunology and the elegance of pharmaceuticals, we have worked to move our thought and action out of the old channels. We have striven to abolish complacency and expose medical dogmas. Our ideal has been to make this Journal invaluable to its readers and to all readers.

From what we hear from our readers, they are pleased with the scientific and literary tradition of the Journal. In the last decade, their silence, we believe, has been superseded by active participation. They now turn to the editorial pages, scientific articles and advertising of elegant pharmaceuticals with more expectation and less by habit. How well have we succeeded? Elsewhere in this issue (page 50) is an appeal to our readers, each and every one of us, to complete a questionnaire (to be mailed shortly) from which we can form judgments of what everyone thinks about Connecticut Medicine. Have we given the reader the type of scientific articles he wants and what special features he desires? How well we are serving our readers, will determine not only Journal improvements to come but success in attracting more advertisers. Increasing advertising will provide information on more products and services that can only redound to the advantage of our patients.

A 100 per cent response to the questionnaire mailed under separate cover to each reader will indicate to all parts of the country, the role of organized medicine and its primary publication, The State Medical Journal. In the words of President Kennedy, "we must move on from the reassuring repetition of stale phrases to a new difficult but essential confrontation with reality . . . " Let us find out how well we have succeeded.

L.H.N.

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The Thymus:

2. Immunologically Reactive Cells

It has been known for a long time that the spleen and lymph nodes play an active part in immune reactions. After exposure to antigen, these organs develop both a high antibody titre as well as numerous plasma cells which secrete antibody. Recently evidence has been obtained that indicates that some primary immune responses may be initiated by the interaction of antigen or antigen processed by reticuloendothelial macrophages with circulating small lymphocytes or in some cases with large lymphocytes. After interaction, these cells settle in the cortex of the nodes or white pulp of the spleen. Here is established a dividing line which produces the effector cells responsible for production of antibodies or destruction of a foreign graft.[1]

The thymus, however, behaves quite differently from other lymphoid structures, for it does not show production of antibody, plasma cells or germinal centers in an immunized animal. This implies that, either there are no cells in the thymus capable of mediating immune responses, or that if such cells exist, they do not somehow come into contact with the antigen. The latter view is probably the correct one because if antigen is injected directly into the thymus parenchyma, then antibody producing plasma cells do appear and germinal centers do form within the thymus. Obviously there exists a barrier between blood and thymus lymphocytes which prevents entry of antigen into this gland.

The failure of the thymus to react actively to autogenic stimuli may be due not only to a postulated hematothymic barrier which restricts the entry of antigen into the thymus, but there may also be a paucity or absence of cells capable in their present state of reacting immunologically. We know, however, that the thymus provides at least some of the cells of the circulating pool. It follows that some change must occur in its cells after they leave the organ that then makes them immunologically competent.

If the thymus directs the development of immunologic responsiveness by feeding the circulation with cells that become immunologically reactive, it might be expected that removal of the thymus would lead to a defective immunologic performance. The answer to this question seems to depend upon when the thymectomy is performed. If thymectomy is performed before full development of the immunologic apparatus, then severe defects in lymphopoietic and specific immune functions do become evident.[1] This happens in rodents if the thymus is removed at or soon after birth, but not in adult rodents. It also happens in mice that are

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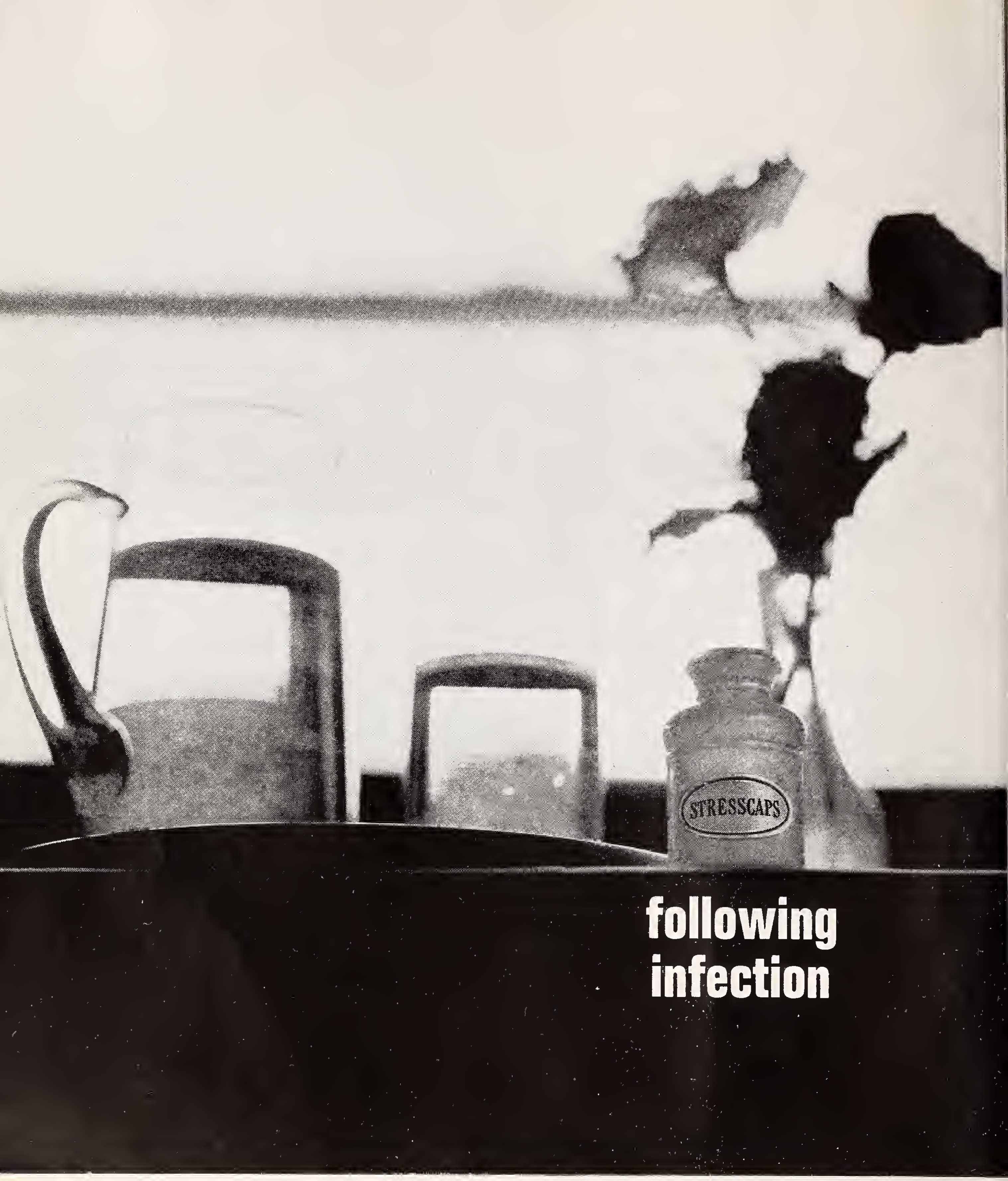

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thymectomized right after birth, who develop a rapid wasting and fatal disease. It also happens in hamsters. However, when thymectomy is performed later only negligible effects are found.

The conclusion seems to be warranted that the role of the thymus is that of establishing the cellular basis for a normally functioning immune system and that this function is restricted to a short period following the development of this organ. If this is true then the reason why thymectomy in adult life causes no serious defects can be explained partly by the long life span of the lymphocytes in the circulating pool and partly because the nodules in the peripheral lympoid organs are sufficiently well established and self-supporting so that they are able to cope with any antigenic stimulus.

However, in the adult, the thymus is still required for establishing immune mechanisms, when the immune apparatus has been damaged or destroyed. The adult thymectomized mouse who has been exposed to massive total body irradiation sufficient to destroy its lymphocytes show severe defects in his lymphocyte population and his immunologic functions. On the other hand, normal animals with intact thymus that were irradiated recovered their normal lymphocyte level within four weeks and were capable of producing all of the immune responses.

It is possible to protect against thymectomy if directly after it the animal is given 5 million spleen or lymph node cells from another animal of the same strain, but bone marrow cells did not protect presumably because these cells are different from those of the spleen or lymph nodes. Finally mice thymectomized after birth do recover if an intact thymus is implanted within a week, even though the graft survived only for 10-15 days. These observations show clearly that the thymus is the source of cells which become lymphocytes after leaving this organ and form the basis of the immunologically reactive system in lymph nodes and spleen.

L.H.N.

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Science Tools:
12. The Germ Free Animal

During the last thirty-five years a methodology has been developed whereby animals can be maintained and propagated free of demonstrable microbial flora. They are termed germ-free, axenic or gnotobiotic animals as distinguished from conventional animals. There are now an increasing number of laboratories both in this country and abroad in which definitive experiments with germ free animals are being conducted. This is the result of a recent technical breakthrough whereby animals in large numbers can be maintained, propagated and utilized for experimentation under germ-free conditions. It however requires rigid attention to procedures which only experienced technicians can carry out.

The animals are delivered by cesarean section and introduced into sterile units called isolators, where they are maintained germ-free. All kinds of animals from mice to monkeys have been introduced into a germ free environment, but only mice and rats have been propagated under such conditions. These animals are free from parasites, fungi, bacteria and mycoplasma. They have a huge thin walled cecum filled with fluid. Their reticuloendothelial system is poorly developed through functional. It can be activated by antigenic stimuli. The individual lymph nodes are underdeveloped and contain predominantly lymphoid follicles in the cortex. They have a low level of immune gammaglobin in the serum which of course reflects the absence of viable micro-organisms.

In terms of appearance, growth, reproductive capacity, and longevity, the germ-free animal compares favorably with, or is superior to, its conventional counterpart. They of course are not subject to intercurrent infection and therefore they may be challenged by one or several bacterial antigens. Nutrition can be studied in these animals. For example, the germ-free animal needs Vitamin K or folic acid which can be synthesized in the intestines of the conventional animal by bacterial flora. The germ free animal seems truly germ-free since no virus has been isolated from them .There remains the possibility that some viruses are transmitted congenitally through the ovum or the placenta as is indeed described in connection with leukemia. Newborn germ-free mice, as conventional mice, can be inoculated with Gross leukemia virus strain A and within three weeks show onset of leukemia in the thymus which becomes very large and also in the lymph nodes and spleen. This viral leukemogenesis occurs in the absence of bacterial flora. One can also produce leukemia in the germ-free animals by total body irradiation. In them virus like structures have been detected in the cytoplasm of the thymus cell. This demonstration of the occurrence of radiogenic leukemia in germ-free mice provides the first suggestion that a virus does exist in these animals. It gives support to the concept that the leukemogenic agent in mice may be disseminated from generation to generation by "vertical" passage. It remains to develop new procedures for unmasking the presence of other viable occult agents in germ free animals.

Studies in cancer can be carried out in germ free animals to determine mechanism of causation by physical, chemical, or viral agents. If rodents can be found that are virus free then non-viral carcinogenic initiation can be studied. Germ-free colonies show mammary gland fibroadenoma and adenocarcinomas and careful study by every available measure showed no viruses in the neoplastic tissue cells. Germ-free rodents also developed tumors after inoculation with heat-sterilized carcinogenic agents which showed no viruses in the tumor cells. For example, a fibrosarcoma induced in germ-free Swiss-Webster mice three inoculations with 3-methylcolanthrene was transplanted nine times to other germ-free mice of the same strain and no cytopathology suggestive of viral action was observed in any of the passages. Such an experiment of course indicates that not viruses alone, but genetic susseptibility also plays a role in carcinogenesis.

Germ-free animals show lymph nodes that are small and contain only occasional germinal zones. But when they are infected with polyoma virus, mouse adeno virus, "K" virus, and mouse hepatitis virus, they develop active reaction zones in the lymph nodes. The same thing occurs in those mice in whom fibrosarcoma has been induced by previous inoculation with 3-methylcholanthrene in oil. In such tumorous animals the lymph nodes show marked zones of reactivity in the cortical follicles. Certain female rats with breast tumors induced by feeding 7, 12-dimethyl benzanthrene show no reaction zones in the cortical follicles. What the lymph nodes reactions noted above is due to needs much further study.

Many studies are under way with the germ free animal. Why it is that they tolerate whole body irradiation better than their conventional counterparts, and why a certain simple bacterial contaminant such as clostrdium difficile as well as certain endotoxins induce even greater tolerance? Why it is that germ free rats develop dental caries when fed a high sugar diet and inoculated with streptococcus fecales?

Another study deals with the effects of bacterial species in the intestinal flora on the nutritional status of the host. We know that bacteria in the normal intestinal flora accelerate oxidative catabolism of cholesterol, greater by fifty per-cent in the conventional animal. It should be possible to find an organism which is responsible for this breakdown of cholesterol.

The physiology of antibody response to highly purified antigen can now be determined in the germ free animal. For example, adult rats on a low antigen diet show a low level of 7S-gammaglobulin. Germ free mice show an age related immunity to viral infection. The nature of this resistance needs further study. We can also anticipate some worthwhile and exciting new applications in the study of wound healing that might be aided or retarded by simple species of bacteria.

Germ-free animals live in a controlled environment, therefore they may be used as monitors of the microflora in an environment of unknown character. They may be used in certain kinds of experimental surgery especially in tissue transplantation, since they are not subject to infection when given drugs which reduce antibody production. In short, with this methodology controlled environment can be provided for surgery under unsanitary conditions, for protection of human burn patients against contamination by the antibody resistant flora in hospitals, as portable inexpensive isolation rooms for patients with contagious diseases.

It is obvious that the use of the germ-free animal may be of help in solving many biological problems. When information is needed on the relation of host to environment, germ-free animals should provide some significant answers even as it already has in virus relation to cancer, and in genetic influences in oncogenesis.

L.H.N.

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The Lymphatic System: 2. The Scalene Node Biopsy

Lymphatics extend from all the supportive tissues of the lung to the hilus pulmonis and thence into the thoracic duct. The lymph nodes standing in the way of the lymphatic stream from the lung parenchyma to the thoracic duct, provide a filtration system for removing particulate matter from lymph before it enters the veins. The lymph enters through afferent channels and leaves the node through efferent ones. Inside the node the lymph weaves its way through medullary sinuses which are lined with reticulum cells and other phagocytic cells that are capable of ingesting particles, thereby removing them from the lymph before it is emptied into the blood. The major function of the lymph node is to prevent the spread of infections and toxins in the body. The node in a particular region also becomes a repository, not merely of infectious products, but also of tumor cells that have desquamated and entered the lymphatics. It is therefore to be expected that when infection or tumor developes in a particular region of the body, the lymph nodes draining the region usually swell considerably, either because of hypertrophy of the

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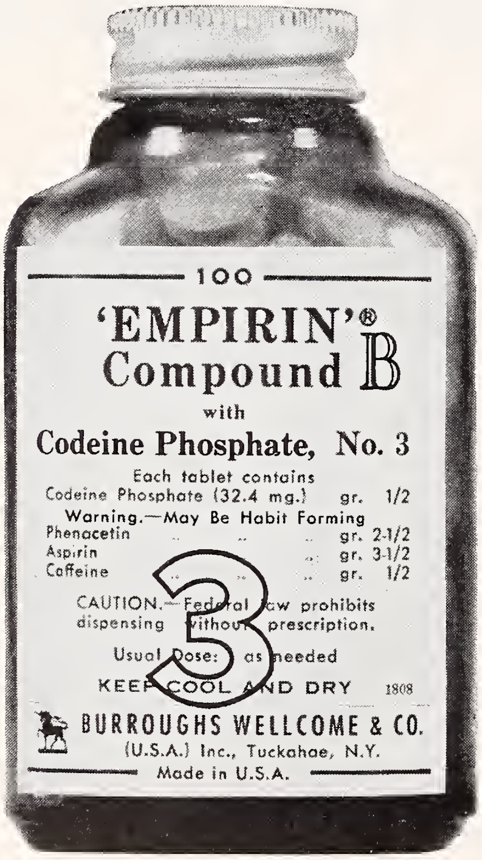

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lymphoid tissue in the node in case of infection, or metastatic growth in case of tumors. It is for this reason that the diagnosis of a number of systemic and internal diseases can often be established with certainty by histological examination of lesions obtained by biopsy of superficial structures of the body.

The value of resection of enlarged superficial lymph nodes for diagnostic purposes has been recognized for decades. In the case of the lungs however this has been impossible as long as our attention was concentrated on the hilus pulmonis. Once it became clear that the scalene lymph nodes, though superficial, do drain lymph from the lungs, then attention was focussed upon this node for biopsy in cases of abscure intra-thoracic and even intra abdominal disease. In 1949 Daniels[1] demonstrated that even non-palpable scalene lymph node biopsy provided a pathological diagnosis in a significant percentage of such cases. Then it was recognized that scalene node biopsy had not only diagnostic but prognostic value in patients with bronchogenic cancer.[2] In such patients the scalene nodes are more commonly involved if the primary tumor is anaplastic, whereas squamous cell tumors are less likely to have spread to the scalene node at the time of biopsy. Accordingly, if the biopsy is positive in a patient with bronchogenic carcinoma, it is generally agreed that the disease is no longer curable and thoracotomy of course, becomes contraindicated. Even if the biopsy is negative it does not necessarily indicate curability or even resectability of the tumors, although Wilson[3] found resectability in over half of thiry-three patients.

If the scalene nodes are clinically palpable, then the biopsy will be positive in a high percentage of patients. Beahrs et al[5] obtained an absolute diagnosis in 364 of 424 such patients or 86 per cent. They point out further that if the nodes are palpable on one side only, the biopsy should be performed on that side regardless of which lung contains the primary lesion, although in such cases, tuberculosis or sarcoidosis may be found coincidentally even though the pulmonary lesion may be malignant. In fact Wolf[4] warns against concluding from the scalene node biopsy alone whether or not a pulmonary lesion is malignant. They report a case in which the clinical picture was that of pulmonary malignancy while the scalene node biopsy pointed in the direction of sarcoidosis.

Biopsy of non-palpable scalene fat pad nodes has also been widely practiced, but the positive results are much fewer, being variously reported from as low as 8 to as high as 50 per cent.[6] Because of such discrepancies in the large number of reports that have been published on scalene node biopsy, a wide diversity of opinion about the value of this procedure has grown up, as well as when the procedure should be performed. The premise upon which the physician operates is that the histologic picture within the node is a reflection of the underlying intrathoracic or intraabdominal disease. As we have seen above in Wolf's case, a positive diagnosis does not necessarily reflect the nature of the lesion in the lung. Neither does a negative biopsy rule out the presence of serious organic disease which has not yet had time to invade the node. Daniels points out that malignancies other than from the lungs may or may not invade the scalene node. Primary carcinoma of the head and neck rarely spread to this node. Breast carcinoma may involve this node. Esophageal carcinoma only occasionally metastasizes to the scalene lymph node. Involvement of this node from intra abdominal cancer is usually an indication of advanced disease. In lymphoma, only the palpable scalene nodes are positive but there are more accessible sites for biopsy in this disease.

It is obvious that as more and more patients are biopsied routinely, the law of diminishing returns holds that the percentage of positive biopsies will decrease as the number of indications for the procedure increases. It is therefore useful to recall Morgan and Scott[6] conclusions that the indications for biopsy of the scalene nodes are (a) palpable nodes. (b) suspected or proven bronchogenic cancer and (c) suspected sarcoidosis. In those patients not meeting the above criteria for scalene fat pad biopsy, there was an incidence of positive nodes of only 1 per cent.

The category of "suspected bronchogenic carcinoma will obviously include a wide variety of pulmonary abnormalities. Scalene node biopsy is more likely to be positive with massive lesions, hilar lesions and peripheral lesions with radiographic or bronchoscopic evidence of mediastinal adenopathy. On the other hand if the lesion in the lung is solitary circumscribed and peripheral, the biopsy is rarely positive. It is also seldom positive with minor infiltrates, obstructive emphysema or pleural effusions without definite parenchymal or hilar masses.

The category of suspected sarcoidosis includes individuals with bilateral hilar adenopathy and many if not all cases of diffuse pulmonary lesions with or without hilar or mediastinal enlargements. Even if the supraclavicular nodes are not enlarged, the scalene node biopsy will be positive in about 80 per cent of patients with pulmonary sarcoidosis.

Diffuse disseminated pulmonary infiltrates especially with hilar adenopathy when due to sarcoidosis, will show a high incidence of positive biopsies. On the other hand most other diffuse disseminated pulmonary infiltrates due to viral, bacterial, rickettsial infections or collagen disorders, rarely involve the scalene lymph node.

In short the generally accepted indications for scalene node biopsy are enlarged supraclavicular nodes, suspected or proven bronchogenic cancer or suspected sarcoidosis. In all other situations the incidence of positive biopsies is low.

The question of the lateralization of the lymph drainage from the lungs is still not settled satisfactorily. Ipsilateral involvement of the scalene nodes is the most common pattern, but bilateral or contralateral involvement may occur no matter which lobe is the site of the primary lesion. Contralateral spread seems to be more common in lesions of the left lower lobe and lingula than in lesions originating in other lobes. Obviously, the search for diagnosis requires the study first of the ipsilateral side and then perhaps the contralateral one. It has however, not been shown that the diagnostic yield is sufficiently increased to warrant performance of bilateral biopsies.

The procedure it should be understood is not without danger. Berger, Boyd and Streider have reported three serious complications occurring in 320 scalene node biopsies, a near fatal hemorrhage from a subclavian artery, and two cases of air embolism. It is therefore, a procedure which must be performed with great care.

L.H.N.

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Rapport:
3. The Formation Of Rapport

When a patient first consults his physician, he recounts his complaints while the physician listens, making further inquiries about particular symptoms. This is the outer structure of the interview, but the inner structure, is the patient's examination of his physician, assessing his competence and trustworthiness of his skills. On his part this is the time when the doctor begins to form the rapport with his patient. His task is to lead the patient to trust him of course, but this is not enough, the patient must be made to feel that he can confide in his doctor. You don't confide to a person who is cold or rigid or disapproving, but only to one who is sympathetic, one who can understand the way a person feels even if he does not approve of what one has done. We thus have two problems, one is to understand and the other is the patient's awareness that we understand.

Here a most important quality in the physician which helps him to understand is empathy. This is distinct from sympathy, for in sympathy we suffer with the patient, but in empathy we know how he feels without necessarily experiencing the same emotion. Persons who have empathy know how the other feels and understands. How do we make the patient become aware of our understanding? We do this by an appropriate emotional response to slight changes in his own feeling tone. A gifted sensitive practitioner does this quite instinctively often unaware of the responses he makes or of their psychological effect on the patient. The less gifted person can learn how to make these responses by watching for slight changes in the emotional tone of the patient and reacting in a normal natural way to the person's change of mood.

Our relation with patients is full of incidents such as Meares[1] describes in the following words: "I was seeing a young man for the first time. My relationship with him was still uncertain. The formation of rapport was becoming more difficult as I had unwisely allowed him to start discussing his father. He was expressing hostility to his father, which seemed likely to be transferred to me. There was a momentary pause, perceived a slight change in his expression, and I interpreted this to mean that he was no longer experiencing the feeling of hostility but rather a feeling of sorrow that things had not gone well between him and his father. I communicated that I understood how he felt by merely leaning forward towards him. If I had made this move while his hostility was still uppermost in his mind, his hostility would have been increased. As it was, he knew that I understood. He just looked me in the face. From then on there was intense rapport." Such an incident may appear trivial when described in words but their consequences often are quite profound.

Besides empathy there needs to be some way of communicating sincerity. The patient must know that he has our undivided attention. If a question arises and we do not know the answer, we should tell him so, not in a manner to reveal our ignorance but to show the patient that there are many unsolved problems. Not knowing the answer to one implies that we are well versed in existing knowl-

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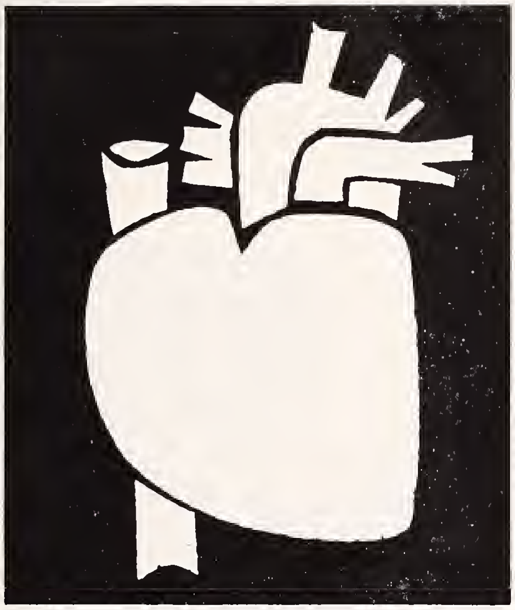

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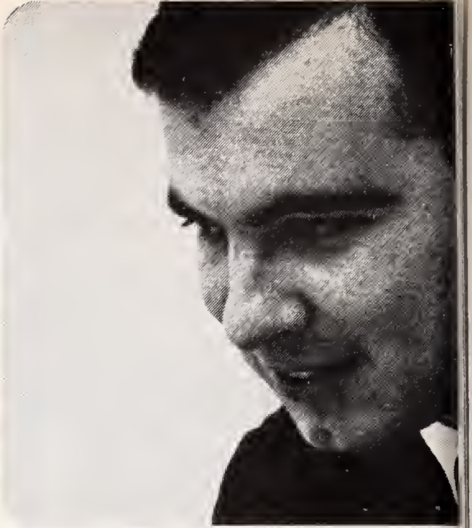

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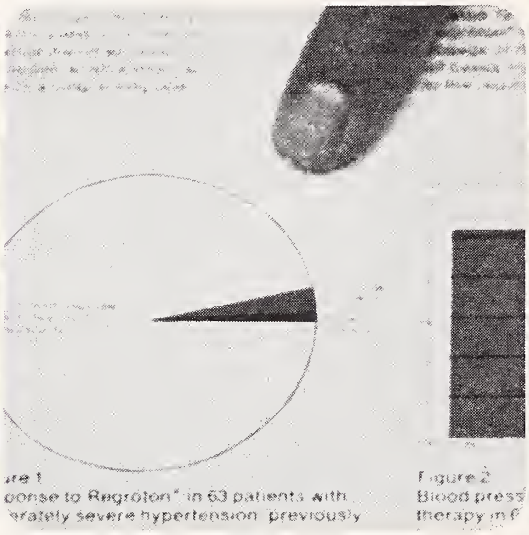

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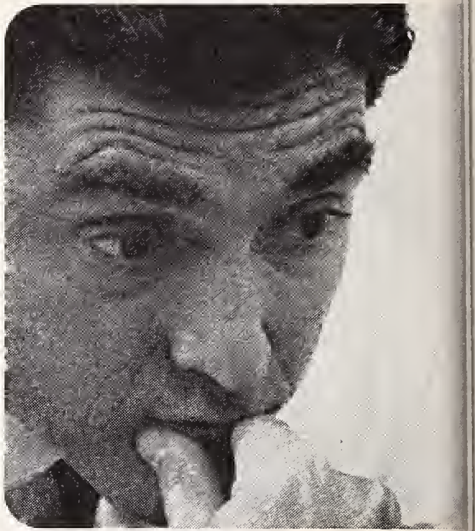

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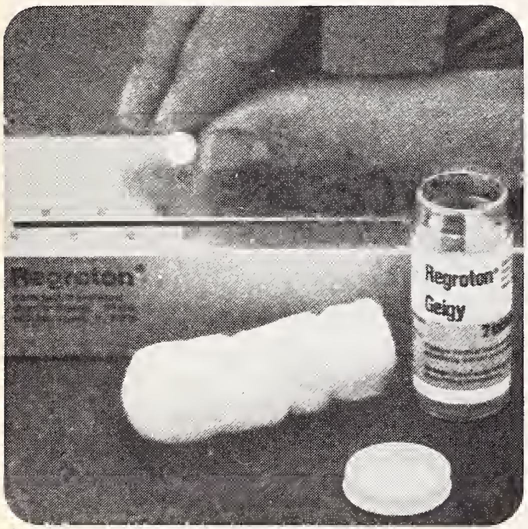

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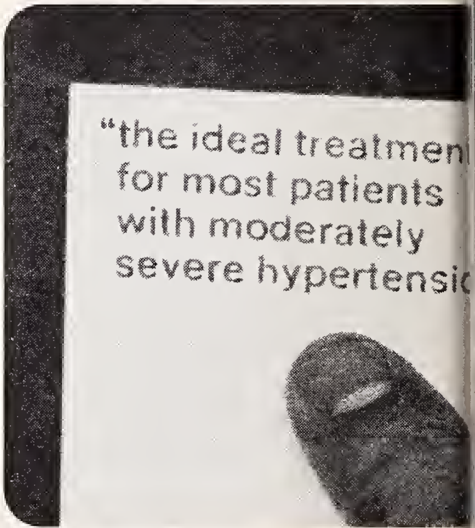

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*Chupkovich, V.; Finnerty, F. A., Jr., and Kakaviatos, N.: The value of chlorthalidone plu reserpine in moderately severe and severe hyp tension: A two year study. Presented at the 7th Inter-American Congress of Cardiology, Montr June 14–19, 1964.

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edge. Some have even held that it is wise to lead the patient to ask a question for which there is no answer or at least one not readily available. It helps the formation of rapport very much if we allow the patient to see how we face problems, how we ourselves search for answers, and how we react when we do not know the answer. Then our behaviour will communicate ideas of reassurance to him. When he is worried about a prognosis or presses us for more information, we can tell him that we may have a better idea in a few days. Being truthful to the patient demonstrates our sincerity, whereas glossing over a difficult situation is at once sensed as insincere. One thing we must always be careful about: in telling the truth we must not appear to the patient as hard or unfeeling.

In establishing rapport we want to bring the patient to know that we feel with him. To do this at the beginning, our emotional tone should follow his. If he is happy, we smile with him and if he tells us something that causes his distress, our own concern should show quite naturally because an expression of feeling which we do not experience is soon sensed by the patient as incongruous and rapport vanishes. If the patient is unhappy we do not appear jovial. It would only demonstrate our insensitivity. Instead we are serious as he is but we communicate an inner confidence by the way we behave and deal with him .Only when anxiety is exhibited by the patient do we remain calm, even though we let him know we understand how he feels, because the more anxious the patient, the more important it is for us to communicate our calm to him.

There are also certain non-verbal communications in the establishment of rapport. We must recall that rapport is an emotional relationship and that it is established by emotional mechanisms such as trust, the feeling that the doctor understands, the feeling of communicating with the doctor—all these cannot be mediated at an intellectual level by logical verbal means. In fact non-verbal means may be more important. The way we greet the patient when first seen assumes a real significance. The patient must be greeted with complete naturalness and different types of people are greeted differently. Inhibited patients we must not at first greet too warmly, they will withdraw. On the other hand the extrovert must have his warmth returned. We should be calm and relaxed with the anxious patient and we should greet the depressed patient quietly to conform to his mood, but we also communicate a quiet confidence by non-verbal means.

We must form a rapport with the patient as soon as possible. Any delay makes future establishment of rapport more difficult because the patient forms his attitude towards the doctor right from the beginning. For these reasons our first contact with the patient becomes very important. We must take enough time for the first visit. Our initial attitude must be neutral but in a few moments, having made some assessment of the patient, we can change our attitude and mood to harmonize with the patient. If the patient is aggressive we remain passive. If the patient is dependent we remain strong and offer support.

Attitudes of a different nature might develop which may have symbolic value. We may become to the patient the permissive parent, the understanding husband, the wise confessor, in fact whatever is demanded by the patient's real life situation or whatever was lacking at the moment of the patient's life that is being discussed. When the doctor and patient are closeted together just the two of them talking alone, the patient knows that anything he says is confidential, that it will never be repeated, it is a secret—a close bond develops between those who share secrets. This is a part of rapport. There may be other symbolic mechanisms, a drink of water, a more comfortable chair is an offer of friendship and brings with it the feeling of emotional community.

As the interview progresses the patient may ventilate some strong emotion which builds up within him and gains expression. The physician is there while the patient is expressing his emotion. The doctor can take the patient's hand to move closer to him emotionally. By this gesture he lets him know he understands and shares his feelings. There is a bond between those who feel together. This is a further step in the consolidation of rapport.

We all know that silence at times is more telling than speech. When silence befalls two people they often make conversation to prevent the uncomfortable feeling that arises in both. However, when the two people are emotionally in tune silence can come that is easy and relaxing. These momentary silences in which both patient and doctor are relaxed together establish a deep feeling of community and understanding and rapport comes easily.

One important thing a physician needs to bear in mind the better to understand his patient, is to recognize that symptomatic and chance acts are not so entirely without meaning as is generally supposed; the forgetting of things one is supposed to know and at other times really does know, mistakes in speaking, similar mistakes in writing and in reading, the automatic execution of purposive acts in wrong situations, the loss or breaking of objects. Such things are trifles. They are thought of as consequences of absent mindedness or inattention. We see our patients playing and trifling with objects, handling one's person and clothing. These things as Freud points out have a meaning, and express impulses and purposes which are repressed and hidden from consciousness. To understand our patient we must learn more about the dynamics of the psychic life as expressed in acts, words, facial expressions. These are symptoms that can lead us to discovery of many hidden events in the patient's psychic life.

L.H.N.

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The Role Of The Sympathetics In Arrhythmias Produced By Digitalis

It is now well established that sympatho-adrenal stimuli play a role in the production of certain cardiac arrhythmias. Nahum and Hoff[1a-f] showed that the ventricular tachycardias and ventricular fibrillation caused by inhaling benzol will not occur if the cardiac sympathetics are cut and the adrenals removed. They studied arrhythmias caused by other substances and in each instance found that without adrenergic activity, no cardial arrhythmias could be produced. Since then considerable evidence has accumulated implicating sympatho-adrenal stimuli in the arrhythmias produced by digitalis glycosides.[2] Experimentally, the production of ventricular arrhythmias by digitalis is increased by sympathomimetic drugs. On the other hand, they can be delayed if the cardiac sympathetics are interrupted by surgical ablation, or if the myocardium is depleted of its nor-epenephrine by reserpine.[3]

We know now that the adrenergic receptors of the cardiovascular system are separable pharmacologically into two groups; the alpha receptors which convey peripheral vasaconstrictions, and the beta receptors which convey cardiac inotropic and chronotropic actions and peripheral vasadilatation.[4] One should suppose from the contribution of the beta receptors to cardiac arrhythmas, that blockade of the beta receptors would interrupt cardiac sympathetic stimuli and might be effective in suppressing digitalis induced arrhythmias. The first such drug produced—dichlorisoproterenol gave considerable protection against digitalis intoxication in animals, but was not suitable for clinical use.[5] A new and more specific beta-adrenergic blocking drug—pronethalol, has been given safely to man both orally and introvenously. It's value in reversing arrhythmias due to digitalis has been demonstrated in animals and by one report in man.[6]

Taylor, et al.[7] describe its use in eight patients with arrhythmias caused by digitalis intoxication. They gave pronethalol once only in doses up to 100 mg intravenously over 10-15 minutes and monitored the effect by recording the electrocardiogram continuously during the injection and intermittently thereafter. There were side effects such as paresthesias, light-headedness, occasional nausea and a 20 mm Hg. fall in blood pressure.

The circumstances surrounding the appearance of digitalis toxicity are: increasing the digitalis dosage, potassium depletion, poor renal function, poorly controlled cardiac failure. The changes in rhythm encountered were beginning multifocal ventricular ectopic beats, atrial tachycardia, with and without atrioventricular block and ventricular tachycardia. Interestingly enough, the success of pronethalol in suppressing the arrhythmias appeared to be independent of the precipitating causes of digitalis toxicity. It was also independent of the site of the ectopic focus being equally effective both in atrial and ventricular tachycardia as reported by Stack and Dole.[6] If A-V block was present, pronethalol tended to increase the block as might be expected, when one removes sympathetic activity, but it also succeeded in abolishing the ectopic focus.

In animals, pronethalol is short-acting since blocking effects lasted but four to five hours after injection. In Taylor's studies the arrhythmias reappeared five to six hours after injection in some of his patients, so that it seems likely that to maintain an anti-arrhythmic action it would sometimes be necessary to give repeated administrations of pronethalol either parenterally or orally.

Taylor gave pronethalol to two patients with atrial flutter without any effect upon the arrhythmia. But this would be expected since atrial flutter and fibrillation are promoted by acctylcholine (Hoff and Nahum) and blocking the adrenergic stimuli would merely tend to promote the arrhythmia not abolish it. Taylor's observation supports the view proposed by Hoff and Nahum that atrial flutter and fibrillation are promoted by cholinergic stimuli while atrial tachycardia is dependent upon adrenergic impulses.

The synergism between sympathetic stimuli and digitalis in producing cardiac arrhythmias parallels the synergism between sympathetic stimuli and benzol and chloroform in producing similar cardiac arrhythmias. Just as the arrhythmic effects of benzol were abolished by interruption of adrenergic stimuli surgically, the pharmacologic interruption of adrenergic stimuli caused a disappearance of the digitalis induced arrhythmias. Clearly it is the adrenergic blocking properties of pronethalol which causes its antiarrhythmic action.

Several questions present themselves. One is whether the drug reduced the contractile force of the heart. In dogs pronethalol has no significant effect on myocardial contracting force. Neither does

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* AMA Council on Foods and Nutrition: The Regulation of Dietary Fat, *JAMA* 181:411-423 (August 4, 1962).
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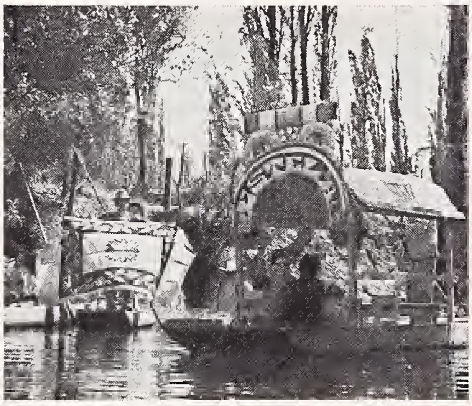

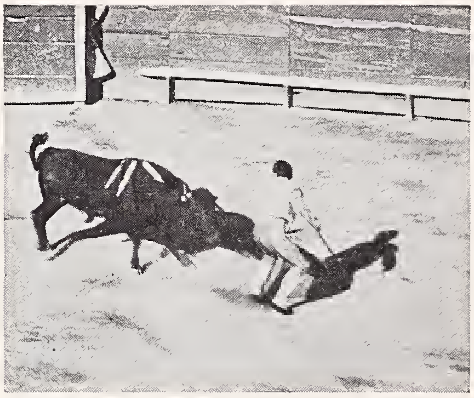

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it interfere with the inotropic effects of injected acetyl-strophanthidin.[8] Accordingly with this drug one can suppress the arrhythmic effects of digitalis without influencing the introtropic properties of heart muscle. However, sympathetic activity is particularly important in maintaining contractility in the failing heart,[9] or in increasing contractility during exercise.[10] For this reason long-term use of pronethalol which blocks this activity may prove to be undesirable.

Another question is whether the drug has undesirable side effects aside from its anti-adrenergic properties. In view of the carcinogenic action of large doses in mice, the prolonged use of pronethalol is certainly inadvisable. However, a closely related analog (ICI45520) has recently been produced which is free of this effect and could be used for its anti-adrenergic effects.[8]

L.H.N.

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Thyrocalcitonin: An Exercise In The Scientific Method

Thyrocalcitonin is the name given to a hypocalcemic principle readily extracted from the thyroid tissue of numerous mammalian species. It was discovered as an outgrowth of an investigation of the difference in the acute effects on serum calcium levels inthe rat between parathyroidectomy by cautery and parathyroidectomy by surgical excision. Simple surgical removal of the parathyroid gland is known to cause a fall in serum calcium since it removes parathormone. However, if the cautery is used to destroy the parathyroid, it, at the same time, stimulates the release of a substance provoking a greater fall in serum calcium than what occurs with surgical removal. Several questions at once present themselves. First of all, whether the substance released from thyroid cautery is thyroxin or triiodothyronine. The simple experiment was merely to remove the parathyroid surgically and then administer these thyroid hormones. The result was negative. Obviously the released substance was something other than known thyroid hormones.

Another question was whether such a hypocalcemic agent is present in other tissues besides the thyroid. Since an experimental model was available in the form of an animal with surgically removed parathyroids, it was easy to prepare extracts of numerous other tissues, such as liver, kidney, salivary gland of the rat, and thymus, pituitary gland and parathyroid gland of the ox and see whether they had any hypocalcemic action. They were found not to be hypocalcemic. Apparently thyrocalcitonin-like activity appears to be present only in high concentrations in the thyroid gland.

If thyrocalcitonin is released by the thyroid gland by cautery, then it should be possible to find it in an appropriate extract from thyroid glands. Foster[1] prepared an extract from thyroid gland of the goat which in fact did produce a hypocalcemic effect when injected into the goat. They repeated the same extraction of the thyroid gland of the dog and again when the extract was injected into a dog, it produced a hypocalcemic effect. Marked hypocalcemic activity of an extract obtained from a surgically removed human thyroid, was produced in the rat. However, six other human samples were extracted and found to be inactive in the rat.

The logical consequence of such observations was to extend them to thyroids of other animals. In the rat, a subscutaneous injection of the extract of as little as one-third of a single rat thyroid gland, resulted in the fall of 20-30 per cent in serum calcium below the normal level in one hour. In the hog, thyroid extract is very easily obtained and also very active. The extract of one hog thyroid gland is sufficient to produce a significant fall in serum calcium in more than one thousand rats. One might question whether the thyroid extract may not be contaminated by parathyroid tissue. In the hog contamination was impossible because the parathyroid glands are inbedded in the thymus, a location quite remote from the thyroid gland. Careful analysis of the chemical and physical properties of thyrocalcitonin, including behavior during purification, indicates that the hormone is a polypeptide. It is destroyed by ashing; it is not present in an ether extract, and its action is destroyed by treatment with a proteolytic enzyme such as pepsin or trypsin.

The next stage in the investigation was to search for the site of action of thyrocalcitonin. Several possibilities now presented themselves. One is that it interferes with calcium absorption by the gut. Another is that it promotes rapid excretion by the kidney. A third is that it produces its action on the parathyroid gland or its hormone. Each step was investigated at length. The hormone exerts its effect in rats fed a low calcium diet and this suggested that absorption of calcium from the gut is not responsible for the hypocalcemic effect. The kidney is also not essential for the hypocalcemic effect since thyrocalcitonin is active in rats whose kidneys have been removed. It has been mentioned earlier that thyrocalcitonin is active in parathyroidectomized rats. Therefore the hormone does not depend for its action upon the parathyroid gland or its hormone. These negative findings indicate that the site of action of thyrocalcitonin is not yet known, but they leave open an intriguing possibility that there may be a direct effect on bone. In favor of this possibility is the existence of a parallel decrease in serum in organic phosphates and serum calcium which would suggest that the hormone is important physiologically and perhaps exerts its effect by increasing the deposition of bone salts.

The concept of a hypocalcemic hormone working antagonistically and in concert with the parathyroid hormone in the normal regulation of the calcium concentration of the plasma is of theoretical as well as practical significance. We have known of insulin and its antagonist glucagon both originating in the pancreas. In neuroendocrine physiology, the production of a hormone is a finely balanced affair, as for example in adrenal gland activity stimulation by ACTH and its feedback inhibition by cortisol. Now we have come to recognize a similarly balanced system, thyrocalcitonin and parathormone, in the regulation of the serum calcium level. The marked activity and easy availability of thyrocalcitonin will doubtless encourage further investigation of its chemistry, pharmacology and therapeutic potentialities.

L.H.N.

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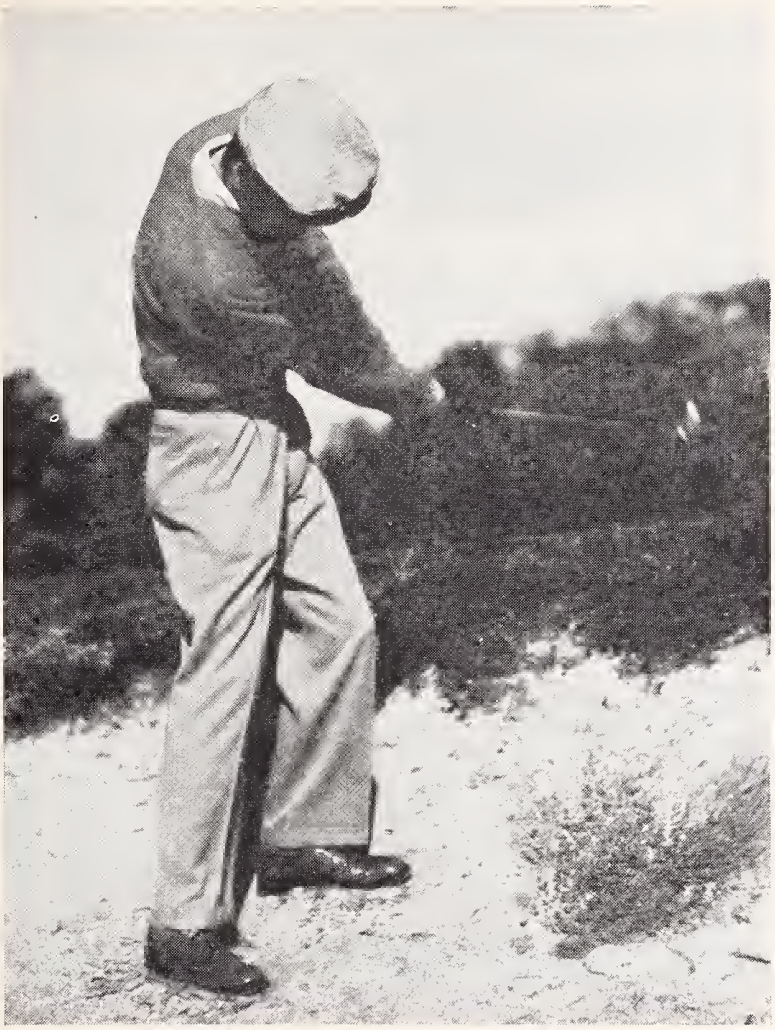
Family Oriented Approach To Hospitalizing Disturbed Adolescents

Of the many ancillary services available in the treatment of the sick, the social worker is the last used yet often the most needed particularly in psychiatric treatment. This is especially brought out in a study in which Nealon[1] explored the psychiatric hospitalization of an adolescent as a family crisis and derived important implications for a therapeutic approach. He reviewed the caseworker's initial contacts with parents of twenty-five adolescent patients. The crisis he found consisted of four parts. The impact of mental illness on the family, family disruption precipitating hospitalization, family disruption following hospitalization, and finally, the confusion arising from parents' expectations of the hospitalization.

The basis for a family oriented approach to an adolescent's hospitalization depends upon our awareness of the parent's crisis. This awareness can be built into a process. As a result a special procedure has been established for admission of adolescents in the Department of Psychiatry at the University of Rochester. When the patient is not an emergency both psychiatrist and case worker collaborate in the evaluation and preparation of the patient and the family. In one or more interviews the case worker has a two-fold purpose, eliciting diagnostic information about the patient and family, and engaging the parent in considering the problem of hospitalization. In elective admission, the timing may depend largely on parent's readiness.

The integral parts of the preadmission process are a visit to the floor where the patient will be hospitalized and an interview in the business office during which plans for financing the patient's hospitalization are made. These tangible steps bring reality into the plan of hospitalization and the parents role in it. But they are also a guage of



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the intangibles, i.e. the parents reluctance or readiness. Both in elective and emergency admissions the case worker exchanges with the hospital staff an understanding both of the patient's illness in the context of his family situation and of the needs, problems and potentialities of the family.

In short, approaching an adolescent's hospitalization as a family crisis is really a specific process, a point of view, not simply of the case worker who sees the family, but also of the hospital staff involved with the family and patient. Because this is often exceedingly difficult to accomplish, there are both unique opportunities and also unique challenges in the family oriented approach to hospitalizing adolescents. A disturbed adolescent is capable of arousing untold degrees of concern and zeal in the staff. We may respond to his helplessness and feel indignant towards his parents. Unaware, the staff may empathize only with the patient while tacitly criticizing and excluding the parents. For example, a patient may be admitted precipitously without more deliberation with the parents. A parent may state (ask?) "This is not all my fault?" and the staff members make no reply. Or a nurse may fail to relay a parent's phone message to the adolescent and then wonder why the patient is complaining "Nothing is happening around here." It is minor matters of this type that may jeopardize the success of therapy.

A family oriented approach in contrast offers sensitivity and help to the parents in their crisis, a help which may decidedly affect the therapeutic success with the patient. It clarifies what diagnostic information we may elicit; what cooperation and active participation we can expect, what disposition and follow-up plans we can implement. When our focus is broadened from the patient to the family, we can bring help to the parents in their crisis and relieve immobilizing anxiety. It opens the way for a true evaluation of the therapeutic potentialities. The relationships so established help the parents weather their crisis and may become the basis for charting the future. It is at the time of crisis that we must begin establishing the means and mode of a family oriented approach. In short, because the adolescents hospitalization is a family crisis, parents deserve therapeutic attention in their own right.

In the solution of the family crisis the social worker is a very important individual in the team needed to treat the disturbed adolescent's hospitalization. It is through the help of the case worker that we have been able to shift the focus to the family in which the illness occurs. In psychiatric admissions there are two interdepedent and compelling reasons for a family oriented approach. The hospital needs the family and the family needs the hospital. The family influences and often obstructs the care of the adolescent patient. The "sabotaging parent" may announce he can't finance the hospitalization or he may be immovably convinced the adolescent is not sick, or he may be inaccessible to the staff during hospitalization and he may tacitly or directly encourage the adolescent's resistance to the staff.

The psychological stresses for the parents are paramount at the time of admission. For this reason, the time of admission is a time of crisis. Appreciating this helps to understand and overcome their resistance and sabotaging tactics. Accordingly part of helping the patient's treatment is to help the parent to collaborate. Nealon[1] points out that parents viewed adolescents admission as a divisive event interrupting or severing the parent-child relationship. Their views obviously have a realistic basis. The adolescent's problem was critical. He could not remain at home. The staff became parental surrogates. Mental illness could mean hoplessness for the patients and futility for the parents. The events precipitating admission or parental reactions to it could portend permanent disruption of the family's psychological balance.

The events of hospitalization implied to the parents that they had failed as parents. Similarly the parent expected that the treatment process would markedly change or interrupt the child-parent relationship. While the patient was in the hospital, often the parent would be criticized or excluded. In fifteen of the twenty-five cases studied the parents expected to have no role in the patients improvement or staff decisions. Twenty-three of the twenty-five parents expected to be blamed by the hospital staff. Viewing themselves as unfit parents who could be superseded by experts, aroused their anxiety and hostility.

Nealon explains why it is that parents expect to be blamed and excluded. First they labor under a popular misconception that "there are not problem children, only problem parents." Then the parents guilt about conflicting feelings toward the adolescent becomes pronounced when he is "ill" and this self-blame becomes projected upon the hospital staff. Parents may provoke hostility to relieve feelings of guilt or to justify their resentment of parental surrogates. The staff itself may re-inforce the parents expectation of rejection and blame. Of all these the staff attitude is crucial, for when parents feel or are made to feel like pariahs, "pathogenic parents" with a "scapegoat" child, they cannot permit or collaborate in the hospital admission.

All this we have learned through careful studies of case histories by a social worker. If the family crisis in the case of disturbed adolescents is so acute, we may expect similar if less acute crises in families whenever a significant figure falls ill and requires hospitalization. We may expect to learn more of this aspect of illness as the social worker expands his studies in non-psychiatric fields. Now that we have been made aware by a social worker of the interdependence of the patient and the famliy, it should enhance our dynamic understanding of illness and the potentialities of treatment.[2]

L.H.N.

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Drugs And Other Measures In The Treatment Of Shock

Recent studies have brought new understanding of the mechanisms of shock and, as a result, new measures for its management have been proposed. These studies, reviewed by J. Fine (JAMA, 188:427, May 4, 1964) and M. Nickerson (in Shock: Pathogenesis and Therapy, an International Ciba Symposium, Berlin: Springer-Verlag, 1962, p. 356), show general agreement among investigators that the critical feature in most cases of shock is a deficiency of blood flow in the visceral circulation. In shock resulting from hemorrhage, burns and trauma, the deficiency is caused by reduced blood volume, usually combined with constriction of the peripheral blood vessels. In all conditions of shock, irrespective of cause, there is reduced cardiac output and blood pressure, prolonged circulation time, retention of waste metabolites, and tissue hypoxia.

Vasopressor drugs such as Levarterenol Bitartrate USP (norepinephrine) (Levophed-Winthrop), once regarded as the mainstay of shock therapy regardless of the cause of the shock, tend to increase peripheral vasoconstriction, and they may increase the intensity of the shock. In general, vasopressors should be avoided except, perhaps, in shock associated with myocardial infarction or overdose of narcotic-hypnotic drugs.

Where possible, the primary cause of shock should of course be dealt with. In all forms of shock where there is a reduction of blood volume (the administration of blood, plasma, or plasma-volume "expanders" to restore the deficit is essential and may be the only measure needed. In some cases, correction of acidosis by administration of appropriate electrolytes and administration of 100 per cent oxygen may also be needed. Where there is septicemia, intensive antibiotic therapy is required (Medical Letter, 6:85, October 23, 1964).

Shock from Myocardial Infarction — Shock following myocardial infarction differs from other types of shock in that reduced cardiac output, rather than reduced blood volume or peripheral vasoconstriction, is the primary factor limiting the circulation. Vasopressor agents will raise blood pressure in many cases and may improve survival, although their beneficial effects have not been proved unequivocally.

Vasopressor drugs that act mainly by increasing peripheral vascular resistance are angiotensin amide (Hypertensin—Ciba), Methoxamine HCl USP (Vasoxyl—Burroughs Wellcome) and Phenylephrine HCl USP (Neo-Synephrine—Winthrop). Vasopressors that act both by increasing peripheral resistance and by stimulating the myocardium include norepinephrine, metaraminol (Aramine—Merck; Pressonex—Winthrop), Mephentermine Sulfate USP (Wyamine—Wyeth), and methamphetamine (Methedrine—Burroughs Wellcome); these are generally preferable to the drugs that act mainly by increasing peripheral resistance.

Other measures usually required in shock from myocardial infarction include the administration of 100 per cent oxygen; correction of acidosis may also be indicated. Since there is usually heart failure associated with the shock, a parenteral digitalis preparation should also be employed.

Other Drugs — The experimental studies of M. Nickerson, as well as those of R. C. Lillehei, et al. (Clin. Pharmacol. Ther., 5:63, 1964) indicate that some vasodilating agents, when administered intravenously, may increase the capacity of the vascular space and, with simultaneous administration of blood or plasma, improve visceral blood flow. If the results of these studies are confirmed, vasodilating drugs will have an important place in the treatment of some types of shock. Corticosteroids improve survival in experimental endotoxin shock; they may be beneficial when given with antibiotics in clinical shock associated with sepsis. The treatment of anaphylactic shock was recently discussed in The Medical Letter (6:77).

In determining the effectiveness of therapeutic measures, systemic blood pressure is an unreliable guide. A low pulse pressure (reflecting decreased stroke volume), tachycardia, cold moist extremities, and slow filling of the capillary nail beds are better indications of the intense peripheral vascular constriction and of the inadequate visceral circulation characteristic of many cases of shock. It is apparent that the mechanism and the treatment of shock in man involve very complex problems. Much more study is obviously needed to establish effective regimens for the control of shock of varying etiology.

Reprinted from The Medical Letter on Drugs and Therapenctis, *New York, N.Y. Vol. 6, No. 23, Nov. 6, 1964.*

The Technique Of Liver Biopsy

H. David Frank, M.D. and Milton M. Lieberthal, M.D.

■ The introduction of the Menghini liver biopsy needle several years ago has further reduced the low morbidity previously associated with liver biopsy.[1,2] In addition, the simplicity of technique with this instrument plus the adequacy of the specimen obtained have convinced us that liver biopsy with the Menghini needle is the procedure of choice. It is the purpose of this paper to describe that procedure in detail.

Since a biopsy technique must be designed to avoid complications as well as to obtain adequate tissue, it seems pertinent to remark briefly on these complications and to note the contraindications in order to place the technique of liver biopsy in its proper perspective.

The major complications consist of hemorrhage, bile peritonitis, and laceration of inappropriate tissue (kidney, pleura, etc.).[3] Although blind introduction of a biopsy needle always will produce a minimal number of instances of hemorrhage and perforation of the biliary system, the extremely small calibre of the Menghini needle does reduce the likelihood of contact with a major blood vessel and the extremely short intra-hepatic phase of the biopsy does reduce the risk of laceration. Furthermore, the incidence of hemorrhage may be reduced to very low levels by refusing biopsy in the presence of hemorrhagic disease and by correcting an abnormal prothrombin time if possible. Complications are reduced further by using a sharp needle only; therefore, no Menghini needle should be used more than three or four times. Over-use of the low cost Menghini needle is analagous to the over-use of a safety-razor blade which can only result in a poor shave and multiple lacerations. The sharp needle, on the other hand, assures a minimum of liver fragmentation and closer approximation of the edge of the biopsy tract once the needle has been withdrawn. Laceration of inappropriate tissue can be avoided completely by picking the point of entry of the needle carefully, planning the direction of the needle thrust with due regard for anatomical landmarks, and assuring the co-operation of the patient by "breathing rehearsal" or general anaesthesia, points to be discussed further.

The absolute contraindications to the performance of a liver biopsy include an uncorrectable prolonged prothrombin time or hemorrhagic disease, infection in the proposed needle path (right chest or peritoneal cavity), ascites, and suspected amyloid, cystic or hemangiomatous disease of the liver. When the interfering infection can be cleared or the ascites removed these cease to be contraindications. Patients with severe anemia, cachexia and/or prolonged severe jaundice probably should not be subjected to biopsy.

It is appropriate to emphasize at this point that taking the recommended precautions and observing the absolute contraindications are the sine qua non of successful liver biopsy technique.

The Menghini needle itself (Figure I) has a hollow bore shaft with a hub adapted to the Luer-lok type syringe. It is 7 cm. long and comes in several diameters; we usually use one with a 1.4 mm. or 1.6 mm. outside diameter. The wall of the needle measures slightly more than 0.1 mm. in thickness. Thus the lumen has a diameter of about 1.2 mm. or 1.4 mm., assuring a biopsy specimen of from 0.75 to 1 mm. in diameter. The needle tip is bevelled at an angle of 45 degrees to its longitudinal axis. There is an obturator with a flattened head, resembling an ordinary nail, which slides into the upper half of the lumen of the needle, but is prevented from falling through to the tip of the needle by its slightly enlarged head, which rests in the hub. The diameter of the obturator is small enough to allow it to ride loosely in the lumen of the needle. This unique feature of the Menghini needle prevents the biopsy specimen from being sucked into the aspirating syringe during the course of obtaining the liver biopsy. There is also a pointed metal stylus (Figure I) for puncturing the skin and subcutaneous tissue to facilitate passage of the needle. The use of this puncturing tool eliminates the necessity for a skin incision by scalpel.

Biopsy of the liver should be performed only on hospitalized patients. It should be done with the patient in his own bed to eliminate moving the patient after the procedure. The operator will require a nurse as assistant. The patient is allowed to eat on the day of the biopsy.

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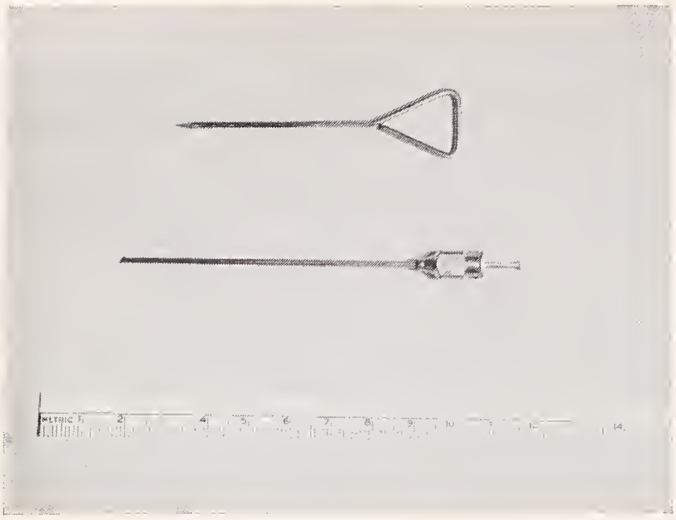

Figure 1

At the top, the pointed metal stylus for skin puncture; below this, the Menghini needle. Note the obturator, partially withdrawn, protruding from the needle hub.

It is not necessary to type or cross-match blood. If, after biopsy, pulse or blood pressure changes indicate intraperitoneal bleeding, this is rarely of such rapidity or amount as to endanger the patient before the modern hospital laboratory can readily cross-match blood. Nor is pre-biopsy sedation generally necessary.

The first step in the performance of a liver biopsy is the choice of a site of needle entry. The patient lies on his back with his right side at the edge of his bed and his right hand above his head. If the liver is enlarged well below the infracostal margin, the subcostal approach is used, with the patient holding his breath in deep inspiration at the moment of biopsy. If the liver is not palpable, a point of entry is chosen in the 9th or 10th intercostal space at the anterior or mid-axillary line, with the patient holding his breath in expiration at the moment of biopsy. The exact site should be further confirmed by preliminary percussion for liver dullness during the appropriate respiratory phase. If a liver scan has pointed to a focal lesion, a less conventional approach may be necessary. In any event, the site of entry should be marked by indelible pen or skin scratches, and the skin area sterilized and draped with sterile towels. All subsequent manuevers are accomplished in the respiratory phase to be utilized at the moment of biopsy. This "breathing rehearsal" allows assessment of the patient's ability to co-operate and is helpfully distracting to the patient who may thus remain unaware of the actual moment of biopsy.

The operator dons sterile gloves and an intradermal bleb with local anaesthetic agent is made at the proposed site of biopsy. The subcutaneous tissue in the path of the intended biopsy is then infiltrated through the intradermal bleb. Our experience is that it is not necessary to anaesthetize down to the parietal or serous membranes in order to perform a painless biopsy. The quick plunge of the thin biopsy needle is much less painful and potentially less harmful than would be further anaesthetic infiltration.

A puncture hole through skin and subcutaneous tissue is then made, using the metal stylus and applying firm controlled pressure to pass it through the anaesthetized tract. It is necessary to control the pressure to avoid too deep penetration.

The Menghini needle, with its special obturator in place, is now attached to the 10 ml. Luer-lok syringe, which should contain about 3 ml. of anaesthetic solution or sterile saline. Some of the fluid should be expressed to check patency. The tip of the Menghini needle is then introduced in the direction of the proposed biopsy through the hole in the skin which has been made with the stylus. The needle is then advanced well into the subcutaneous tissue. At this point $\frac{1}{2}$ to 1 ml. of fluid should be expressed from the syringe to remove from the needle any tissue which might have been accidentaly picked up by the needle. The patient is then instructed to hold his breath in deep inspiration (for the subcostal approach) or in deep expiration (for the transpleural approach) and, with constant, negative suction on the syringe and with one quick smooth stroke, the needle is plunged in the planned direction into the liver and, as quickly, completely withdrawn. Negative suction is maintained during the withdrawal, too. At this point, there should be contained within the needle a two to four cm. "worm" of liver tissue. This can then be very gently pushed into the fixative solution by expressing the remaining syringe contents through the needle. A band-aid type of dressing is then placed over the wound and the patient is asked to remain quietly on his back over a period of four hours. The head of the bed may be elevated for mealtime. Pulse and blood pressure should be checked hourly for four hours. Aspirin may be used to control post-biopsy pain.

The technique described presupposes a co-operative patient. In the case of young children, when co-operation is not to be expected, we believe a satisfactory alternative is available. The hospital anaesthetist can induce general anaesthesia at the bedside with vinyl ether and a nose cone. Local anaesthesia is not necessary, of course, and if the child has been prepared with a full dose of antiemetic medication to prevent post-anaesthesia vomiting, a highly satisfactory procedure results. Since it is necessary that the operator time the needle plunge to the appropriate respiratory phase, depending on the mode of approach, the slow respiration under anaesthesia is helpful. The total duration of anaesthesia is only several minutes.

Liver biopsy in pediatric problems is thus rendered simple and safe.

The specimens obtained with the Menghini needle have been almost uniformly satisfactory to our pathologist. Distortion and compression have been minimal. Although one biopsy is usually all that is necessary, occasional cases of cirrhosis will produce fragmented liver tissue, necessitating a second biopsy plunge. We have not hesitated to repeat the procedure under these circumstances. Also, on occasion, a biopsy may be repeated another day to detect a focal lesion not found with the first biopsy. If the clinical suspicion is strong enough, the safety of the procedure justifies this repetition.

In our experience, there is no simpler method for obtaining a satisfactory liver biopsy than that described above. The precautions are easy to take. The contraindications are readily identified. The instrument is not costly, and the necessary equipment is readily available in all hospitals. The results are highly satisfactory, and the morbidity and mortality are negligible. However, it cannot be too strongly emphasized that mastery of these technical aspects is not the only prerequisite for liver biopsy. The physician must also familiarize himself with the proper indications, the relevant anatomy and the exact place in the clinical spectrum where liver biopsy will provide the most useful clinical information. In the final analysis, these considerations remain foremost.

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Reaction To Harvey's Discovery Of The Circulation

Harvey's book was not an overwhelming success. Some members of the College of Physicians spoke of it with complimentary recognition. But at least one of his colleagues went on teaching the movement of the blood in the hall of barbers and surgeons for years as if he had never even heard of him, although he knew Harvey and his views very well.

He had to put up with many mocking remarks from other sources, he was called "circulator," as the attendants on quack doctors at fairs were called, for there was too frequent mention of the circular movement of the blood in his book. His practice fell off appreciably. Was it not a matter to be weighed very carefully whether to turn to a physician who was held in contempt by a number of professors and barbers of great distinction?

The apothecaries did not value his prescriptions, which was very unusual in the case of a court physician. In one case he was even sued for overlooking a fracture in one of his patients.— Tibor Doby, M.D. *Discoveries of Blood Circulation. From Aristotle to the Times of Da Vinci and Harvey.* New York, Abelard —Schuman, 1963, p. 208.

Pleural Biopsy

Stephen B. Sulavik, M.D.

■ Nearly every physician has been confronted with the diagnostic problem presented by pleural effusion when the effusion is the only, or main, clinical feature of a disease process. Using currently acceptable methods of examination of the pleural fluid, coupled with the clinical picture, up to 40 per cent of patients with pleural effusions cannot be accurately assessed. The cause, then, is generally presumed to be due to tuberculosis or malignant disease. It is in defining these two entities that pleural biopsy has proved to be a most valuable diagnostic tool.[1]

In the case of tuberculous pleural effusion, little reliability in terms of diagnosis can be given the total or differential cell count, specific gravity or total protein content. The glucose content of the pleural fluid, too, is relatively unreliable. The ability to isolate tubercle bacilli bacteriologically from the pleural fluid is quite variable, and although positive results range from 10 per cent to 70 per cent, 25 per cent is considered quite acceptable and even commendable. Other sources of tubercle bacilli in these patients are sputum and gastric or bronchial washings which yield 10 per cent to 15 per cent positive results even without roentgenographically detectable pulmonary tuberculosis.

Cytologic study of the pleural fluid for malignant cells may be inadequate since not only may the fluid be falsely negative but false positives may be reported due to an understandable confusion between malignant cells and normal mesothelial cells. It is not at all uncommon for clear pleural fluid not containing malignant cells to be called tuberculous when in reality it is malignant.

It is clear, therefore, that the diagnostic yield, particularly in cases of tuberculous pleural effusions, is quite low with respect to the currently employed modes of diagnosis. Thus, there is a need for a procedure to establish a definite diagnosis of the cause of pleural effusion when study of the fluid in its proper clinical setting does not reveal the precise diagnosis. Ideally, the technique should be simple, safe and effective and in addition should provide an answer quickly: In many instances, biopsy of the parietal pleura provides the necessary answer. Closed biopsy of the parietal pleura, since first described in 1955 by DeFrancis, Klosk and Albano,[2] has not only proved simple and informative but can be performed at the same time as the thoracentesis without any additional morbidity. Closed needle biopsy has proved most rewarding in cases of pleural effusion whose etiology is tuberculosis or malignancy. In approximately 73 per cent to 80 per cent of patients with pleural effusions due to tuberculosis, (Table I), the pleural biopsy will be positive, showing granuloma consistent with the diagnosis. In approximately 50 per cent to 66 per cent of cases of spread of malignancy to the pleura (Table II) malignant invasion in the pleura and/or subpleural tissue will be noted.

From the Section of Chest Diseases, Department of Internal Medicine Yale-New Haven Medical Center.

TABLE I
TUBERCULOUS PLEURAL EFFUSION
SPECIFIC PLEURAL BIOPSY DIAGNOSES

	+ *Biopsy*	% + *Biopsy*
Donohoe et al.[3] (1958)	28 of 38	73%
Mestitz et al.[4] (1958)	70 of 85	80%
Hampson and Karlish[5] (1961)	24 of 32	75%

The closed needle biopsy method usually employs a Vim-Silverman,[2] Cope[7] or Abrams[8] needle. The author's experience has been limited to the use of the Abrams needle, also referred to as the "Harefield" and "English" needle. It's use is simple and requires no more skill than is needed for thoracentesis. In over 200 biopsies, no fatalities have occurred. The only complication in this group was the development of needle tract tumor implantation in two patients who had malignant

TABLE II
MALIGNANT PLEURAL EFFUSION
SPECIFIC PLEURAL BIOPSY DIAGNOSES

	+ *Biopsy*	% + *Biopsy*
Donohoe et al.[3] (1958)	8 of 16	50%
Mestitz et al.[4] (1958)	20 of 30	66%
Pagel and Goldfarb[6] (1960)	13 of 20	65%
Hampson and Karlish[5] (1961)	25 of 40	62%

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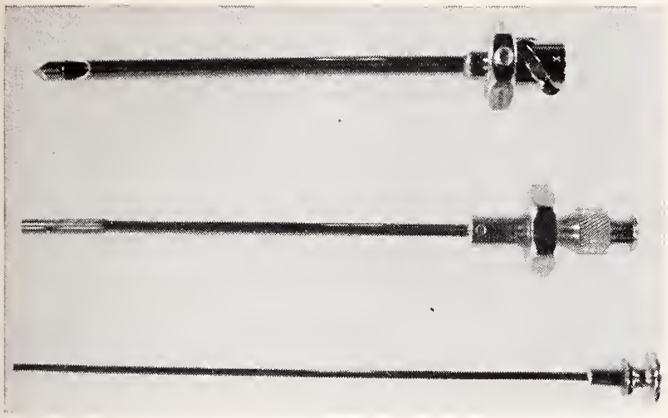
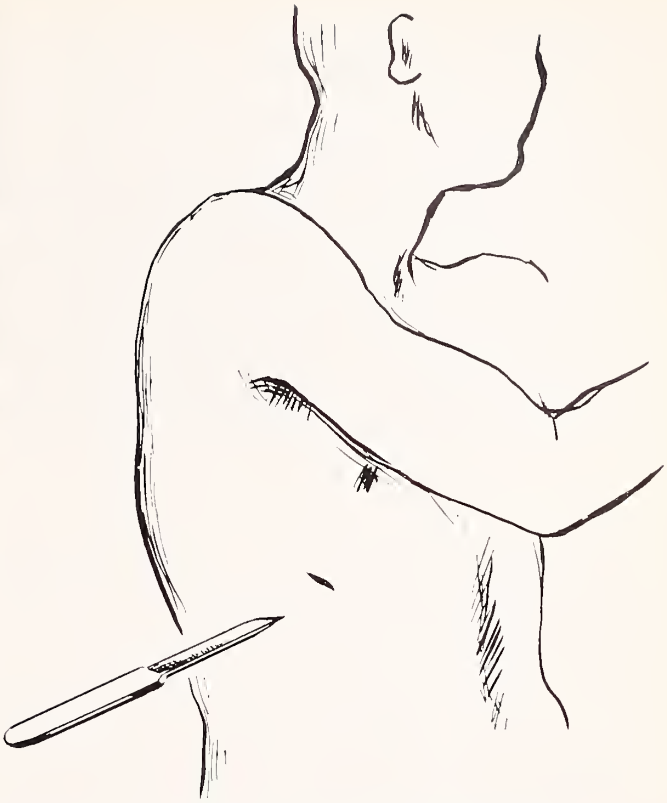


Figure I
Abrams Punch-Biopsy Needle.

invasion of the pleura. The Abrams needle has been productive of pleural tissue in over 95 per cent of biopsy attempts even in unskilled hands. There is little or no tissue distortion and the specimen size is quite adequate (4 by 3 millimeters). Also, fluid for examination can be withdrawn through the needle prior to biopsy, thus accomplishing two procedures in one, i.e., aspiration of fluid and pleural biopsy.

Figure I shows the three components of the Abrams pleural biopsy punch: from above downward, a stylet, a hollow inner cylinder and a hollow outer cylinder. The outer cylinder has a short, trocar point, sharp enough to penetrate the chest wall after a small "incision" has been made in the skin and subcutaneous tissue, but not sharp enough to penetrate the lungs even when the effusion is completely aspirated. Just behind the point of the outer cylinder is a deep notch communicating with the inside of the tube and the blind cul de sac at the trocar tip. This notch, or opening, can be closed by advancing the inner "cutting" cylinder forward into the blind tip by turning the hexagonal grip of the inner tube clockwise and thus sliding its pin (shown in the diagram to be just distal to the hexagonal grip) obliquely forward in the oblique slot seen at the proximal end of the outer cylinder. The distal end of the inner tube consists of a sharp, cylindrical cutting edge and when this is advanced forward, closing the notch, will cut and hold any tissue which has become engaged in the notch. A metal protuberance is seen on the hexagonal grip of the outer cylinder, which is on the same plane as the notch, so as to identify where the notch is in space when the distal part of the needle is in the pleural cavity. This is to insure keeping the notch from being engaged in an area below a rib where vessels or nerves might conceivably be "biopsied." The stylet produces an airtight system. However, when the system is open, withdrawing the stylet only half to three-quarters of the way out, some fluids may be seen to pass around the stylet and drip, thus providing evidence that one is in a fluid-containing space.

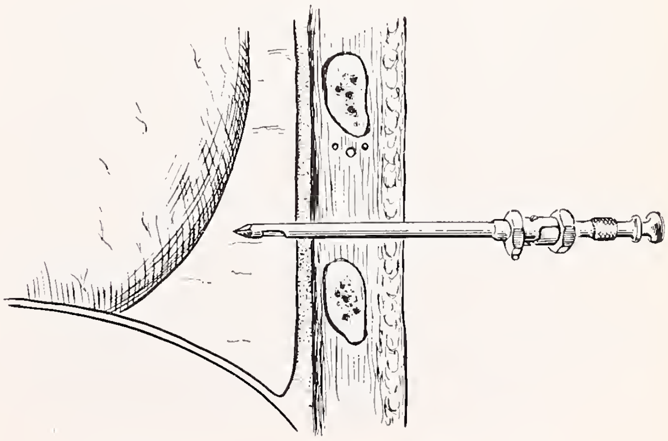


5 mm INCISION

Figure II

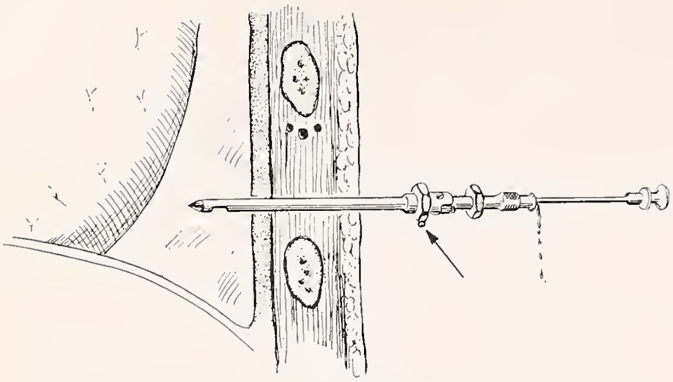
Technique

The chest wall to the parietal pleura is infiltrated with anestetic in the usual way. A small incision, (Figure II) is made in the skin and subcutaneous tissue. It is quite important to further the incision through the subcutaneous tissue since if this is not accomplished one meets increased resistance when attempts are made to advance the needle into the pleural cavity. When too great a force is applied by



NEEDLE IN CLOSED POSITION

Figure III



NEEDLE IN OPEN POSITION

Figure IV

the operator, the needle may suddenly plunge into the pleural space under very little control. If undue force, then, is required, it is best to withdraw the needle and deepen the incision.

The Abrams needle is introduced into the pleural cavity in the closed position, that is, with the inner cylinder advanced into the tip of the outer cylinder and the stylet in place, (Figure III). The needle is now air-tight. It is quite usual, during the passage of the needle into the pleural space, that one experiences two distinct "gives," the first of which is penetration of the subcutaneous and perhaps muscle tissue. As one further advances the needle, a second "give" is felt, this representing penetration of the pleura itself, the distal part of the needle now lying in the fluid-containing pleural cavity. The aspiration apparatus is then attached to the mount on the inner cylinder after the stylet has been removed. The hexagonal grip of the inner cylinder is then rotated counterclockwise so as to have an open system, i.e., from the pleural space, through the notch and into the inner cylinder to the aspiration apparatus. If the aspiration apparatus is not used, one can withdraw the stylet partially, open the system and note, after a few seconds, dripping of pleural fluid from the inner cylinder, (Figure IV). At this time, fluid may be aspirated for specific studies, after which the notch is directed downward on a plane with the upper side of a rib by means of the indicator knob on the front hexagonal grip. The needle is then slowly withdrawn and pressure exerted in the direction of the notch is maintained until a distinct engaging of the notch in the parietal pleura is felt, (Figure V). With the needle then held firmly and pressure still maintained in the direction of the notch, the hexagonal grip of the inner cylinder is rotated sharply clock-wise, advancing the cylindrical cutting end, (Figure V), thus cutting and holding any tissue which has been engaged in the notch. The needle is then rotated 180 degrees and withdrawn. Moderate pressure for a minute or two will prevent any bleeding or fluid leakage and a small pressure bandage is applied to the area. The biopsy specimen generally is located in the hollow tip, (Figure VI). However, occasionally it is found in the tip of the hollow cylinder.

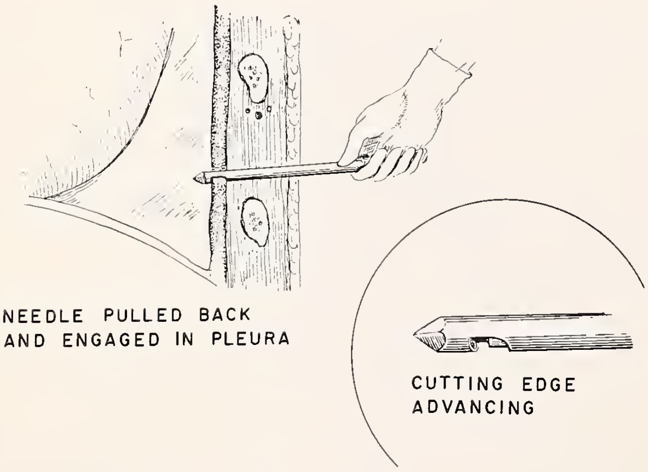
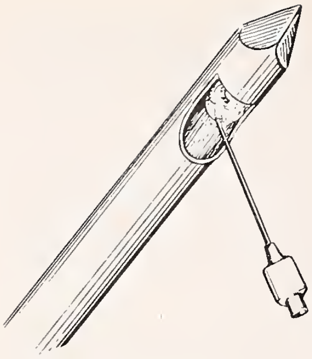


Figure V



NEEDLE REMOVING SPECIMEN FROM ABRAMS NEEDLE

Figure VI

The following case reports demonstrate the usefulness of this procedure:

Case I

N.G., a forty-three year old, white female, noted the gradual onset of pain in the low back with bilateral radiation at the level of approximately the tenth posterior ribs. This pain was increased by deep breathing. The patient also noted some shortness of breath on exertion. Since the patient three months previously was in an automobile accident, it was felt by the private physician that this pain was related to that episode. After three months of no relief of symptoms by various modes of treatment the patient was hospitalized and X-ray of the chest showed bilateral pleural effusions. Thoracentesis revealed a blood tinged pleural fluid with 1.8 grams of protein and 50 per cent eosinophils. No malignant cells were found in the pleural fluid. A pleural biopsy was performed which showed infiltrating adenocarcinoma, (Figure VII.). Further work-up revealed abnormalities of the left kidney which were compatible with a neoplastic process. The source of this pleural tumor was felt to be metastases from the kidney.

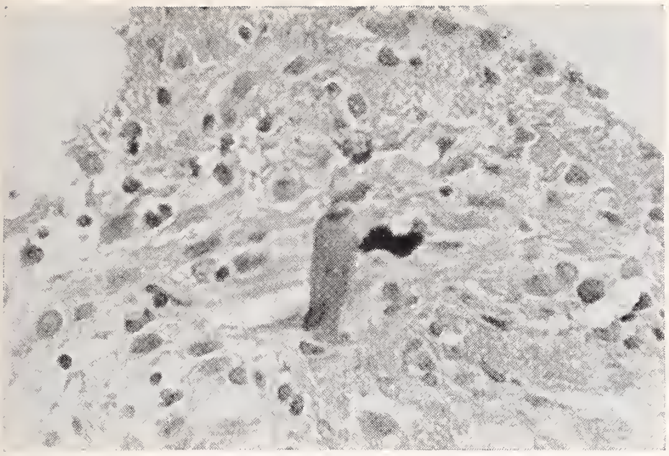


Figure VII
Invasive adenocarcinoma of the pleura
from Case 1.

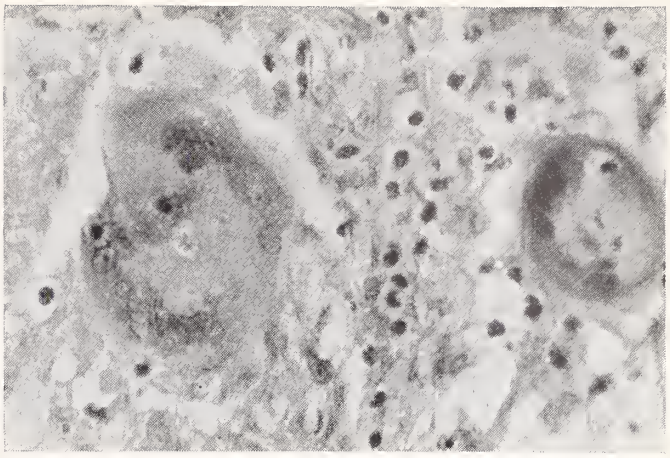


Figure IX
Langhans' giant cells
from Case 2.

Case II

W.H. is a fifty-one year old, negro female who had noted a dull, achy pain in the right shoulder for approximately eight months prior to hospitalization. The patient's hospitalization was prompted by increasing shortness of breath. Chest X-ray revealed a moderate degree of effusion in the right hemithorax, some question of right hilar adenopathy and evidence of partial atelectasis of the right lower lobe. The presumptive diagnosis at this time was bronchogenic carcinoma. Pleural biopsy, however, revealed caseating and noncaseating granuloma consistent with a diagnosis of tuberculosis, (Figures VIII and IX.). Since evidence of tumor was still strongly suspected, the patient was subjected to open thoracotomy, at which time no evidence of tumor could be found and the pleural surfaces were noted to be studded with numerous tubercles.

Case III

V.K., a sixty-four year old, negro male, entered the hospital with left pleuritic chest pain and shortness of breath. X-ray of the chest revealed a massive left pleural effusion. No malignant cells were found on cytology of the pleural fluid. Pleural biopsy revealed invading carcinoma felt to be due to spread from a primary bronchogenic carcinoma, (Figure X.).

Discussion

Biopsy of the parietal pleura with the Abrams needle should be restricted to those cases where pleural effusion is present. Biopsy in cases of pleural effusion whose cause is not obvious should be performed at the initial thoracentesis. This approach has the advantage of not subjecting the patient to a second thoracentesis and insures that a closed biopsy will be done, since if one waits, it is not at all uncommon for the effusion to completely resorb within a short time, with the result that closed biopsy is not performed. In those cases where minimal amounts of fluid are present and only the costophrenic angle is blunted, X-ray of the patient in the lateral decubitus position on the side of the effusion may show a "running" of the fluid along the lateral chest margin. If this is demonstrated, biopsy can easily be accomplished

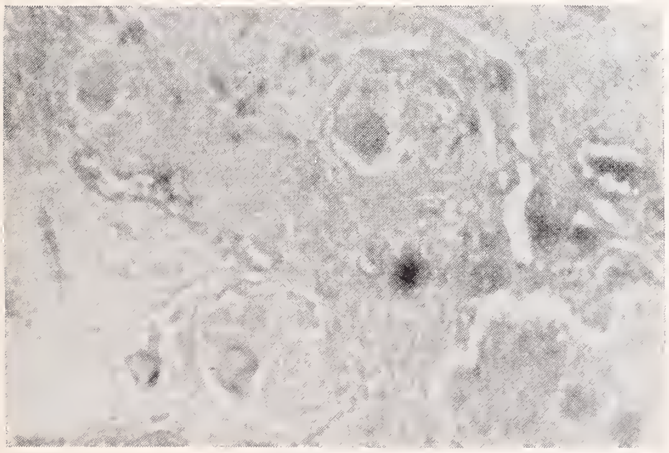


Figure VIII
Noncaseating granuloma
from Case 2.

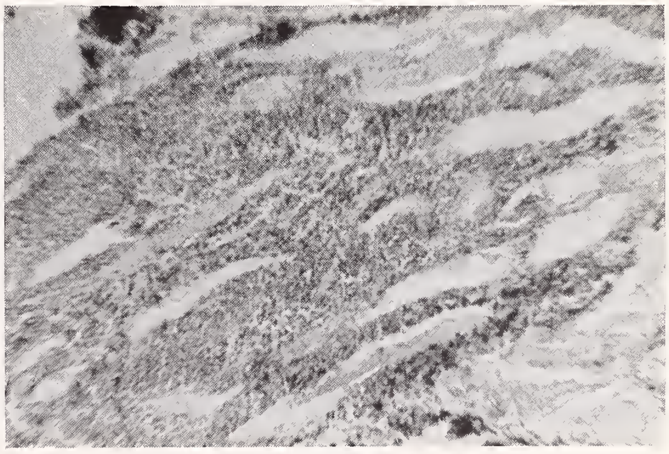


Figure X
Carcinoma invading the pleura
from Case 3.

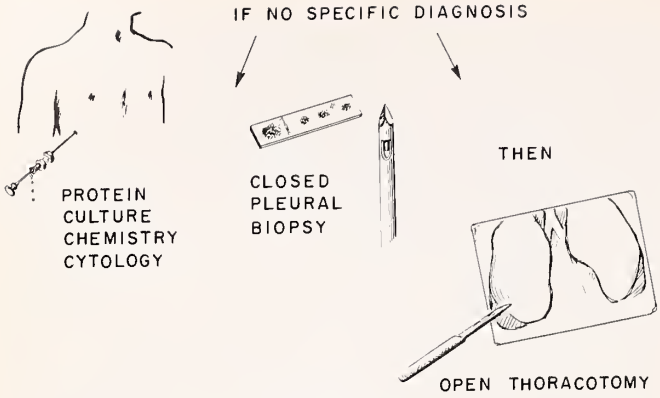


Figure XI

with the patient in the lateral decubitus position, (usually lying between two beds), and the operator then can advance the needle from below, in the mid-axillary line, usually in an area just below the axilla. This has the obvious advantage of avoiding traumatic injury to either the lung or abdominal viscera.

The punch biopsy specimen must show a specific histologic structure such as granuloma or neoplasm before it can be accepted as being representative of the process causing the pleural effusion. If the specimen is reported as showing normal pleura, fibrinous pleuritis, nonspecific inflamation or fibrosis, a repeat aspiration biopsy or, if not contraindicated, surgical biopsy is recommended, (Figure XI).

Summary

1. Biopsy of the parietal pleura is an important aid in the diagnosis of pleural effusion, if the cause is not obvious.
2. The technique of biopsy of the parietal pleura using the Abrams pleural-biopsy punch is described.
3. Three cases are briefly described, demonstrating the usefulness of pleural biopsy.

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Our Incomplete Knowledge Of Cardiac Hypertrophy

There are many cases of hypertrophy, and of great hypertrophy of the heart, in which during life and after death no source of increased work can be discovered. The degree of enlargement found in many hearts in which there is a valve defect, such as aortic regurgitation or mitral stenosis, is sometimes out of all proportion to the apparent increase of burden. There is still much that remains to be explained; it is clear that there must be hidden sources of increased work, or the conclusion that increased work is the cause of hypertrophy needs revision.—Sir Thomas Lewis. *Diseases of the Heart*. New York, The Macmillan Company, 1933, p. 106.

Peroral Small Bowel Biopsy

Robert S. Rosson, M.D.

■ The development in recent years of simple and safe non-surgical biopsy techniques has made significant contributions to the understanding, diagnosis, and treatment of digestive diseases. Procedures such as percutaneous liver biopsy, rectal biopsy, and gastric biopsy, have become standard tools of the modern internist and gastroenterologist. The value of these techniques has stimulated the increasing use of peroral small bowel biopsy. This procedure has led to major advances in the understanding of the etiology, histopathology, and treatment of nontropical sprue. In addition small bowel biopsy has found widespread application in the differential diagnosis of malabsorption syndromes and in research into the histopathology and histochemistry of the small intestine. This article will attempt to demonstrate the technique and applications of peroral small bowel biopsy.

Equipment

The characteristics of the many instruments available for small bowel biopsy have been summarized by Crosby[1] and by Ross and Moore.[2] The principle employed is essentially the same for each device: a semi-rigid tube is passed by mouth into the duodenum or proximal jejunum, where a fragment of mucosa is induced into a biopsy capsule by suction and severed by an externally-activated knife. Some devices are capable of obtaining two or more specimens during the same intubation; more recently hydraulic instruments have permitted serial sampling by delivering each specimen to the outside as it is taken.

The instrument to be described here is the Multipurpose Suction Biopsy (Rubin) Tube.*[3] This instrument, which can be employed in any part of the gastrointestinal tract, has the advantages of flexibility, small diameter, controlled suction pressure, and multiple sampling. It consists essentially of a metal capsule, a circular knife on the end of a manual pull-wire, and a plastic-covered Bowden spring (Figure I). Controlled external suction, measured by a manometer, is applied to pull mucosa into a port in the capsule whereupon the knife is activated to detach the specimen. The instrument is easily assembled, cleaned, and sterilized.

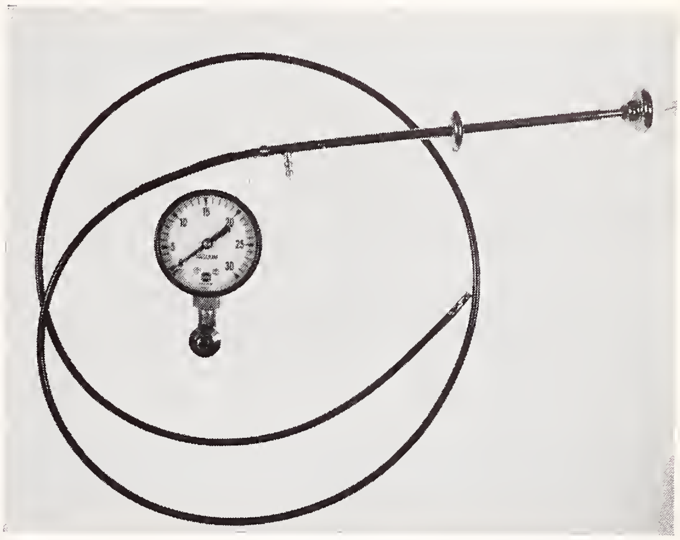

Figure I
The multipurpose suction biopsy tube.

Technique

The method used is essentially that recommended by the original authors:[3]

1. The procedure is suitable for outpatients as well as hospitalized patients, if there is no history of bleeding tendencies and the prothrombin (Quick) time is normal. The incidence of significant bleeding after biopsy is so low that it is not necessary routinely to keep cross-matched blood on reserve, although it is advisable to do so in elderly or severely ill patients. An upper gastrointestinal series with serial small bowel films is obtained to indicate localized lesions or anatomic variations such as gastroenterostomy, pyloric obstruction, or intestinal diverticulae.

2. The patient is kept fasting for at least six hours. Anxious patients are pre-medicated with a barbiturate. Most patients can swallow the tube with ease; but if severe gagging is encountered, a mild topical anesthetic, such as benzonatate or tripelennamine, may be employed.

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* Manufactured by the W. E. Quinton Instrument Co., Seattle, Washington.

From the Department of Medicine, Hartford Hospital, Hartford, Connecticut. Presented in part at the annual meeting of the Connecticut State Medical Society, Hartford, Connecticut, April 29, 1964.

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3. The assembled tube is passed by mouth into the stomach about one hour prior to a pre-arranged fluoroscopy time. A mercury-filled finger cot attached to a groove on the capsule serves as an excellent motor bolus to propel the tube through the pylorus. The patient is placed on his right side and instructed to swallow the tube slowly, a few centimeters at a time. Usually by the time the patient reaches the X-ray department the capsule has passed through the pylorus. When children are to be biopsied it is advisable to perform the entire procedure in the X-ray department.

4. Final positioning of the tube is done under fluoroscopic control. The duodenal bulb, the region of the ampulla of Vater and any known diverticulae are avoided. The tube may be directed to the site of a known lesion or to a localized diseased segment. In diffuse small intestinal disorders both the duodenum and jejunum provide satisfactory tissue specimens.[4]

5. When the tube is in position, it is withdrawn slightly to avoid the mercury bag. With the capsule open, air is blown through the tube to insure patency. Negative pressure is then applied with a syringe, the amount varying with the age of the patient and the region to be biopsied, (10-12 mm. Hg. is usually adequate for small bowel). If negative pressure is not sustained, the syringe is released and the attempt is repeated. When negative pressure can be maintained for 3-5 seconds, the pull-wire is activated to sever the specimen and close the port. Multiple specimens may be obtained by withdrawing the tube a short distance and repeating the procedure or by using a capsule with two ports. If this procedure is carefully followed an adequate specimen will be obtained in almost every attempt.

6. The tube is removed with the port closed and the specimen placed immediately in a fixative. Routine hematoxylin and eosin staining is adequate for most purposes, but special stains are of value in certain disease states, (Table I). The most important aspect of preparing sections is insuring that the tissue be cut in a plane perpendicular to the villous surface to avoid tangential artifact.

7. After the procedure, the patient is permitted to eat and to ambulate. Vital signs may be checked periodically for a few hours.

Applications

Peroral small bowel biopsy is an essential part of the evaluation of any patient with unexplained diarrhea, steatorrhea, or other evidence of intestinal malabsorption. A normal biopsy is shown in Figure II. Note the orderly surface columnar epithelial cells with nuclei in line at the base, the long slender villi, the sparsely cellular lamina propria, and the well-defined muscularis mucosae. In sections from the duodenum, Brunner's glands are often seen in the submucosa among scanty strands

TABLE I. DIAGNOSTIC FEATURES OF SMALL BOWEL BIOPSY IN VARIOUS DISEASES

DISEASE	STAIN	PRIMARY ABNORMALITY	ASSOCIATED ABNORMALITY
Nontropical Sprue[7, 9, 17] (Celiac sprue, idiopathic steatorrhea, celiac disease)	H & E	Blunting or loss of villi; Flattening of surface epithelium	Inflammatory infiltration of lamina propria
Tropical Sprue[8]			
Whipple's Disease[18] (Intestinal lipodystrophy)	PAS	Clubbing of villi PAS—positive Macrophages or Clubbing of villi; PAS-positive Macrophages	Vacuoles, dilated lymphatics Cellular infiltration
Intestinal Lymphangiectasia[19] (Idiopathic protein-losing enteropathy)	H & E	Dilated mucosal lymphatics	Lipophages (PAS — negative)
Malignant Lymphoma[20, 21] Lymphatic Leukemia[22]	H & E	Infiltration of lamina propria with abnormal lymphocytic cells	Blunting of villi
Carcinoma[23, 24]	H & E	Adenocarcinoma in jejunal epithelium	
Scleroderma[25] (Progressive systemic sclerosis)	Masson	Collagenous encapsulation of Brunner's glands	Fragmentation and fibrosis of muscularis mucosae
Amyloidosis[26]	Amyloid	Amyloid deposits in vessels, crypts, and muscularis mucosae	Amyloid around Brunner's glands and submucosal vessels
Urticaria Pigmentosa[27] (Systemic mast cell disease)	H & E	Eosinophilic infiltration of mucosa and submucosa	Partial villous atrophy
Sarcoidosis[2, 28]	H & E	Typical granulomata in mucosa	
Iron-Deficiency Anemia[29]	H & E	Partial villous atrophy	Inflammatory infiltration of lamina propria

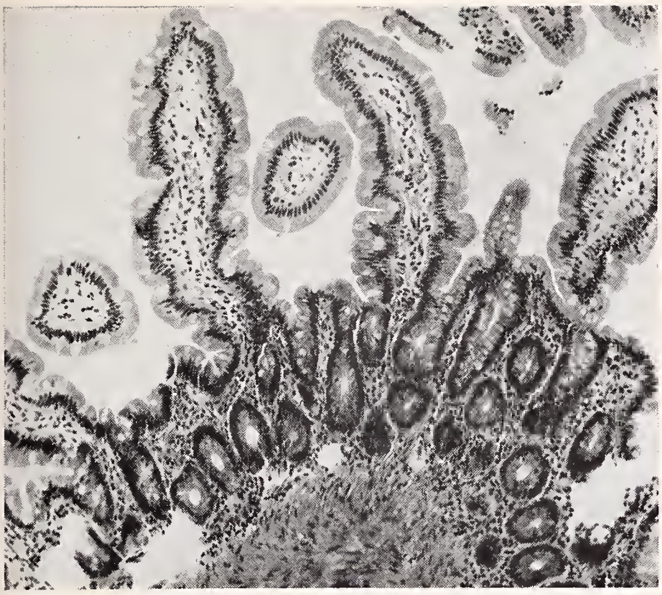

Figure II
Normal jejunal mucosa obtained by Rubin tube biopsy. H & E stain (x 100).

of collagen. Normal mucosa is usually found in patients with functional diarrhea, pancreatic disease, regional enteritis, Zollinger-Ellison syndrome, post-gastrectomy steatorrhea, and steatorrhea due to diabetic autonomic neuropathy[5] or lactose intolerance.[6]

The diagnostic features described in various small bowel disorders are summarized in Table I. The list includes diffuse and localized lesions, primary small intestinal diseases, and generalized systemic illnesses.

The histopathology of nontropical sprue deserves further comment. The lesion is identical in adults and children.[7] The pathologic features are specific and are mimicked only by those of tropical sprue,[8] which must be differentiated by history or response to therapy. Of great interest is the finding that elimination of gluten from the diet can lead not only to clinical improvement but also to histologic improvement or reversion to normal.[9-11] Further evidence for the etiologic role of gluten in this disease has been the demonstration, with the use of the hydraulic biopsy tube, of the production of characteristic lesions in the normal ileum of sprue patients by the local instillation of wheat flour.[12]

Other applications of peroral small bowel biopsy include histochemical studies of mucosal enzymes in health and disease, electron microscopic studies of normal and abnormal ultrastructure, in vitro assays of mucosal biochemical systems, and evaluation of therapeutic measures in Whipple's disease[13] and other disorders affecting the small bowel.

Complications

The incidence of complications of peroral small bowel biopsy is so low that the procedure is acceptable for outpatients. The reported complications consist of hemorrhage, perforation and the "post-biopsy" syndrome.

Serious hemorrhage is exceedingly rare and has not been reported following the use of the Rubin tube as described in this paper. Significant bleeding has occurred with the Shiner tube[14] and hydraulic biopsy tube.[15] It has been estimated that the usual blood loss following the procedure is not more than 2-3 cc.[16]

Perforation of the intestinal wall is even more infrequent than hemorrhage, and again has not been reported with the Rubin tube. One case of perforation occurred when a Crosby capsule lodged in a duodenal diverticulum—a structure not covered by smooth muscle.[16] The Crosby capsule has been involved in another unusual complication wherein the capsule could not be dislodged from the jejunal mucosa and had to be removed by surgery.[16]

The post-biopsy syndrome consists of abdominal pain, tenderness, and fever following removal of a multiple-sampling hydraulic tube, and is thought to be due to traction on the root of the mesentery.[15] It can be prevented by slow withdrawal of the tube. It has not been encountered with the Rubin tube or other clinical instruments which take only one or two biopsies.

In summary, serious complications are rare with all available instruments, and none have been reported with the Rubin tube as described in this paper.

Conclusion

Peroral small intestinal biopsy is a safe, simple, reliable, and valuable procedure. It is recommended in the evaluation of all patients with unexplained chronic diarrhea or intestinal malabsorption.

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Renal Biopsy

Thomas F. Ferris, M.D.

■ This report will discuss briefly the technique and clinical application of kidney biopsy in the care of patients with renal disease. The experience will be drawn primarily from the use of kidney biopsy in 230 patients with renal disease at the Grace-New Haven Hospital. For a report of the experience with renal biopsy of a large number of investigators the reader is referred to a Ciba Symposium held in 1961 in which the results of over 6,000 biopsies are described.[1]

The value of renal biopsy in the study and investigation of renal disease is apparent. Since the introduction of percutaneous biopsy in 1950[2] the pathological correlation in various clinical disorders of renal function has been greatly expanded. Prior to the development of the percutaneous biopsy technique electron microscopic examination of pathological kidneys had not been studied. By the use of renal biopsy and electron microscopy the fine glomerular lesions in "lipoid nephrosis," diabetic glomerulosclerosis, lupus nephritis, and toxemia of pregnancy have been more clearly defined. Serial biopsies have added greatly to the understanding of the acute pathology[3] and the long term prognosis in acute post streptococcal glomerulonephritis[4] and to the pathological changes occurring with steroid therapy in childhood "lipoid nephosis."[5] In addition, the pathological definition obtained by biopsy is of utmost importance in the selection of cases for controlled trials of various modes of therapy.

Technique

The primary difficulty in kidney biopsy has been the localization of the kidney and obtaining the specimen from the very narrow cortical layer. The original technique of Muehrcke, Kark, Pirani[6] depended upon the localization of the kidney by plotting its position on an IVP or flat plate. Since the kidney may move as much as 5 cm. with inspiration the prior localization of the kidney by IVP or flat plate was subject to marked error in interpretation. This technique was used in the first 150 biopsies from this hospital but since 1963 the use of image amplifier fluoroscopy with television has been used to localize the kidney during the actual biopsy procedure. The advantage in the use of fluoroscopy is in being able to localize the needle in the lateral margin of the lower pole of the kidney, away from the renal pelvis and collecting system. This confirmation of the actual site of biopsy diminishes the risk of injury to the main renal vessels and by localizing the needle in the outer margin of the kidney increases the probability of obtaining cortical tissue. The kidney can usually be visualized adequately without the use of contrast material but in small children, and adults in whom the kidney can not be visualized by fluoroscopy, 50 per cent Hypaque is injected five minutes prior to biopsy.

When the decision to do a biopsy has been made, the procedure is explained in detail to the patient and a reexamination of the patient's past medical history to rule out the presence of a bleeding diathesis is obtained. A platelet count and prothrombin time are determined and two units of blood are placed on reserve in the blood bank. An IVP or flat plate of the abdomen is obtained to ascertain the presence of two kidneys. Meperidine and secobarbital are given I.M. one hour prior to biopsy. The patient is placed prone on the fluoroscopy table with a foam rubber cylinder under his abdomen to fix and assert anterior pressure on the kidney. Under fluoroscopy the left kidney is visualized and after the local insertion of an anaesthetic, a 22 guage L. P. needle is inserted into the lower pole of the kidney. One can usually feel a characteristic resistance as the renal capsule is pierced. The position of the needle is verified by fluoroscopy and the needle's characteristic wide arc of movement with inspiration is confirmed. The L. P. needle is then withdrawn and the length required to reach the kidney noted. This is of value in determining the depth to which the cutting needle should be inserted. The Franklin modification of the Vim-Silverman needle is then inserted through the same tract to the predetermined depth. The position of the biopsy needle is confirmed by fluoroscopy and the specimen is obtained in the usual fashion with the patient holding his breath in inspiration. There is usually no pain associated with penetration of the kidney. The patient is returned to the ward where his blood pressure and

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pulse are checked every fifteen minutes for two hours and every hour thereafter for 24 hours. He remains at bed rest during this period.

The specimen is fixed in 10 per cent formalin and sections are cut 3 $\bar{\mu}$ in thickness.

Contraindications And Complications

The presence of a single kidney or a bleeding diathesis represent the only absolute contraindications to biopsy. A relative contraindication is the presence of significant hypertension, particularly malignant hypertension, since there is a higher incidence of post biopsy bleeding with hypertension. Biopsy should be done in the severely hypertensive patient only when the value of the biopsy seems important enough to warrant the increased risk. It should then be done only after the blood pressure has been treated with anti-hypertensive medication since the bleeding may be related directly to the severity of the hypertension.[7]

Although deaths have occurred following kidney biopsy, none was reported in the 6,000 biopsies reported by those investigators having the widest experience with the technique.[1] It seems clear that the incidence of complications is quite low in those with adequate experience in the biopsy technique. Because of the intrinsic risk of any closed biopsy the procedure should be limited to those hospitals where sufficient need for biopsy exists to allow an adequate experience to be gained by one physician in the technique and where there are pathologists interested in the study and interpretation of biopsy specimens. Two physicians have done all of the biopsies at the Grace-New Haven Hospital.

In the 230 biopsies at the Grace-New Haven Hospital the only serious complication has been the need for transfusion in two patients following biopsy. Gross hematuria has occurred in approximately 3 per cent of the patients following biopsy and CVA tenderness lasting for 24 hours after the biopsy in 2-3 per cent.

Indications

With our increasing experience with biopsy and the safety factor afforded by direct visualization, we are presently willing to biopsy any patient with diffuse renal disease of unknown cause who is able to undergo biopsy without undue hazard. Although in only a few instances did the biopsy radically alter the therapy of the underlying disease, in all instances in which a biopsy has been done valuable information has been obtained that aids in the physician's comprehension of the patient's disease. The biopsy has been a valuable adjunct to the more indirect measures of renal function available; i.e., urinanalysis, IVP, 24 hour urinary protein, BUN, etc.

There are however several conditions in which a biopsy is particularly warranted.

Nephrotic Syndrome

The nephrotic syndrome is a clinical description of the patient with proteinuria, hypoalbuminemia and edema. At least 39 disease states can produce the syndrome.[8] In certain types of renal disease causing the nephrotic syndrome, adequate clinical data has been obtained to show that steroid therapy can cause a remission in the disease. Prior to embarking upon a course of steroid therapy pathological confirmation of the renal lesion causing the nephrotic syndrome is important.

The most common causes of the nephrotic syndrome in adults are membranous and proliferative glomerulonephritis, "lipoid nephrosis," diabetic glomerulosclerosis, lupus nephritis and post streptococcal glomerulonephritis. The more unusual causes include renal amyloidosis, renal vein thrombosis and sub-acute bacterial endocarditis.

The efficacy of steroid therapy is most clearly established in the so-called "lipoid nephrosis" (the most common cause of the nephrotic syndrome in children) where either no pathological change can be seen by light microscopy or only minimal basement membrane thickening occurs. Characteristic changes can be recognized however by electron microscopy. Lipoid nephrosis responds to steroid therapy in 60-80 per cent of cases.[5] In contrast, the membranous and proliferative forms of glomerulonephritis respond less frequently; the proliferative type in approximately 30 per cent of cases and the membranous in 10-15 per cent.[9,10] With the exception of lupus nephritis, which will be discussed later, the other causes of the nephrotic syndrome do not respond to steroids. It is thus of extreme importance to obtain pathological confirmation of the glomerular lesion so that steroids can be used in those conditions that have been shown to respond and not used in those diseases where the use of steroids is of no value and may actually worsen a preexisting uremic state.

Figure I is the characteristic lesion of membranous glomerulonephritis from an 18 year old girl with the nephrotic syndrome who did not respond to steroid therapy. In contrast Figure II is from a 56 year old woman with the nephrotic syndrome with primarily a proliferative lesion who did respond to steroids with a reduction in her 24 hour protein excretion from eight grams to less than one gram.

The pathology may also be a factor in determining how long one tries to induce a remission with steroid therapy prior to discontinuance. The usual course of therapy is four to six weeks of high doses of steroids and discontinuance at that time if there has been no improvement in the 24 hour urinary

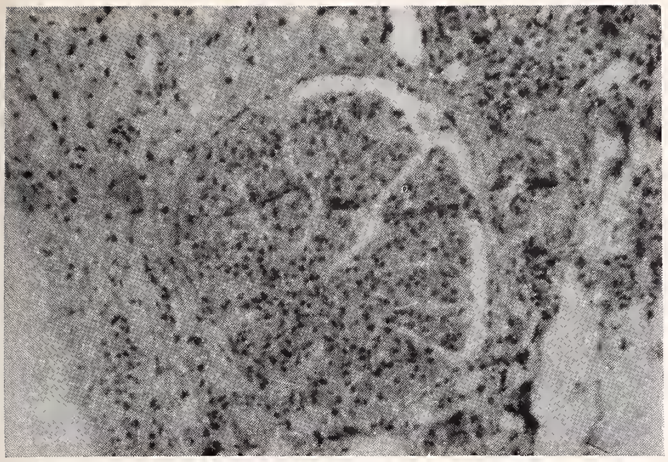

Figure I.
Membranous glomerulonephritis. Note the diffuse thickening of the basement membrane of the entire glomerulus.

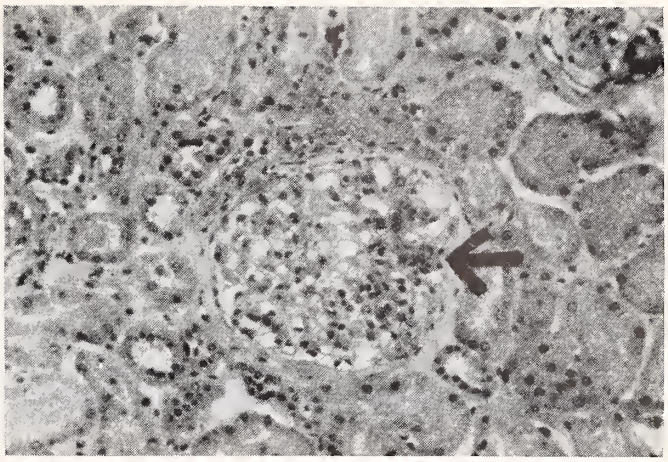

Figure III.
The arrow marks the focal hypercellularity ("glomerulitis") seen in lupus erythematosus.

protein excretion. In patients with a favorable lesion steroids might be continued longer than this period.

Although amyloidosis is a rare disease it is not so rare when one is dealing with a population of adult, particularly elderly, nephrotics. In the past year four patients with renal amyloidosis, unconfirmed prior to biopsy, have been saved from potentially dangerous steroid therapy.

Collagen Disease

In systemic lupus erythematosus renal biopsy should probably be carried out even in the absence of clinical evidence for renal involvement since approximately 30 per cent of patients with lupus and normal renal function studies, including urinanalysis, will be shown to have histologic evidence of lupus nephropathy.[11] Whether renal involvement is present has prognostic significance since recent studies have suggested that patients without renal involvement at the onset of their disease infrequently develop lupus glomerulonephritis.[12, 13]

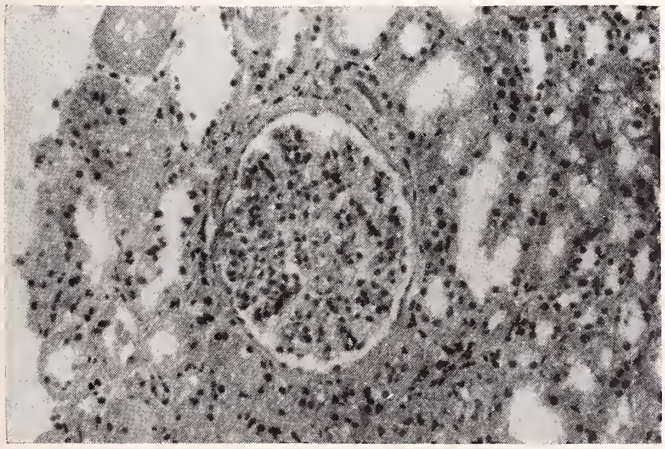

Figure II.
Proliferative glomerulonephritis. The glomerulus is hypercellular with increase in endothelial and epithelial cells.

There is some evidence that patients with an active glomerulitis as the result of lupus nephritis and without significant azotemia (BUN below 30 mg. per cent) are benefitted from steroid therapy.[11, 13] Figure III demonstrates the type of focal glomerular lesion in lupus that responds to steroid therapy. Serial biopsies have confirmed disappearances of these milder and active lesions and possible prevention of new lesions with treatment. When the lupus glomerulonephritis has caused basement membrane thickening, glomerular fibrosis and crescent formation the disease is less apt to remit with steroids.

Arteritis involving the kidney is an indication for steroid therapy and clinical evidence for an arteritis with renal involvement warrants a kidney biopsy.

Hypertension

We have found biopsy occasionally of benefit in the evaluation of patients with unilateral renal artery stenosis in whom nephrosclerosis in the contralateral kidney is suspected. The potentiality of reversing the hypertensive state is lessened when severe nephrosclerosis is present in the uninvolved kidney and intrarenal vascular disease may mimic renal artery stenosis in its effect on split function renal studies.[14] Figure IV is the biopsy of the left kidney from a 46 year old man with stenosis of his right renal artery. With the finding of advanced nephrosclerosis in the left kidney and no differentiation of function on the Howard test, the possibility of causing reduction of his hypertension with surgery was felt to be insufficient to warrant the risk. He presently is being treated with anti-hypertensive medications. Biopsy should probably not be done on the uninvolved kidney however, if split function studies indicate significant compromise in excretory function of the kidney with the arterial stenosis.

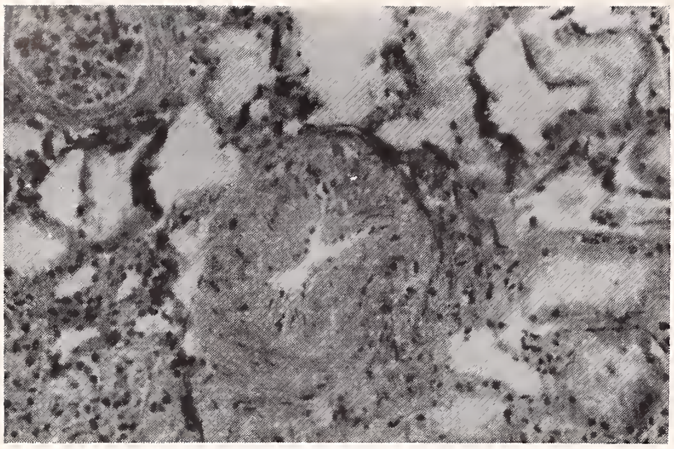

FIGURE IV.
The marked intimal proliferation of this interlobular artery is apparent.

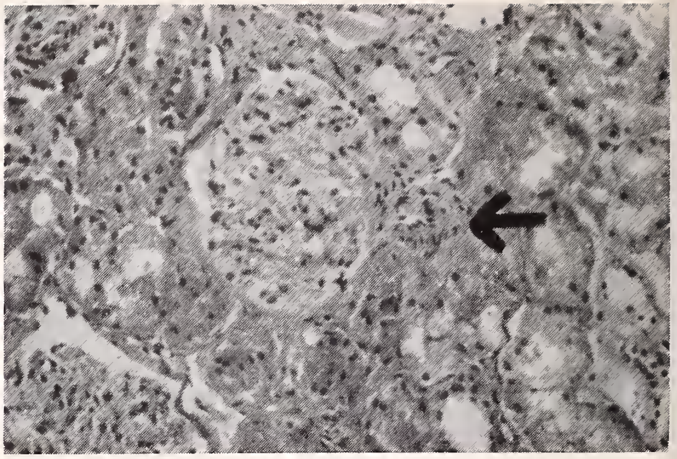

FIGURE V.
The arrow points to the thickened afferent arteriole accompanying a relatively normal glomerulus.

An example of the value of biopsy in a hypertensive patient is demonstrated in Figure V which is the lesion found in a 44 year old man with moderate hypertension (B.P. 160/95). Although this patient's urinary sediment was negative for cells or casts, his 24 hour urinary protein excretion ranged from 4-6 grams. It was thought that on the basis of the significant proteinuria his hypertension was secondary to chronic glomerulonephritis. The biopsy revealed virtually normal glomeruli but significant vascular disease of the kidney. He is presently being vigorously treated with anti-hypertensive drugs which we would have been less inclined to employ if his hypertension had been the result of chronic glomerulonephritis.

Orthostatic Proteinuria

Although previously it had been thought that orthostatic proteinuria was the result of the changes in renal hemodynamics that occurred in susceptible individuals with assumption of the upright position,[15] more recent studies utilizing renal biopsy have shown significant renal pathology in approximately 50 per cent of patients with orthostatic proteinuria.[16] It would seem then that the demonstration of orthostatic proteinuria is sufficient reason for biopsy to determine whether renal pathology is present. In those cases free from pathological changes the physician would have more confidence in the prognosis and the knowledge obtained can be helpful in the patient's obtaining insurance or employment.

Acute Renal Failure

Although acute renal failure probably imposes a greater risk to biopsy, Iversen[1] has done over 200 biopsies in acute renal failure without a fatality. It has been used in many centers to determine the pathology in patients with acute renal failure before embarking on a prolonged dialysis regimen. The presence on biopsy of a severe sclerosing glomerulonephritis would be, in the opinion of many, sufficient reason to forego dialysis since the chance for recovery is so slim. We have never biopsied patients with acute renal failure and have always assumed that all acute renal failures are potentially reversible. We have used dialysis in these situations whenever it was clinically indicated and have not relied upon the renal pathology in making this judgment.

Summary

The technique and some of the clinical applications of percutaneous renal biopsy are discussed.

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Vim-Silverman Needle Bone Marrow Biopsy

Marion F. Baxter, M.D.

■ The peripheral blood picture in some hematological disorders frequently does not offer accurate information regarding the status of the blood forming organs. Besides its ability to offer the clinician invaluable assistance in establishing a diagnosis, sternal bone marrow aspiration, as a simple, safe technique, has also proven valuable in controlling therapy.[1,2]

There are certain disadvantages inherent in the aspiration technique that require consideration. One of these, dilution of the specimen with peripheral blood, may be overcome by the use of the particle smear technique, advocated by Propp.[3] This method, of all the other aspiration techniques described, offers a less distorted anatomical picture, and has proven most useful in the diagnosis of bone marrow disorders. However, it often remains difficult to demonstrate focal marrow involvement by granulomas and carcinoma by the aspiration method, because of disruption of anatomical relationships by the smearing process itself.

A major disadvantage of the aspiration technique is the so-called "dry-tap." in which little or no marrow is obtained. An incidence of 5-10 per cent has been reported[2,4,5] Weisberger[6] has emphasized the fact that such a dry tap is a significant finding which should not necessarily be blamed on poor technique or marrow aplasia. Aplasia cannot be distinguished from fibrosis on the basis of a dry tap alone. It is a well known fact that dry taps are frequently encountered in marrows packed with abnormal cells, as in leukemia, multiple myeloma, and lymphosarcoma. Whereas the marrow cellularity in these instances actually may be increased, poor separation of cells on aspiration may lead to an erroneous impression of decreased cellularity.

Several attempts have been made to correct disadvantages in the aspiration method by the use of special devices,[7,8] needle trephines[9] or surgical trephines.[1] Surgical biopsy, although it usually produces specimens satisfactory for diagnosis, has numerous disadvantages. The services of a surgeon, and operating room are required. As with any surgical procedure, the patient encounters considerable anxiety, and discomfort, and faces the possible danger of postoperative bleeding and wound infection. A prolonged period of decalcification of the surgical specimen is usually required because of the amount of boney cortex present.

In recent years, needle biopsy of bone marrow has proven to be a valuable and preferred technique. The posterior iliac crest was chosen as the preferred site, after it was demonstrated that this area offers the thickest marrow area which can be easily and safely penetrated in both the child and the adult with a minimum of discomfort.[10] The successful use of the Vim-Silverman needle technique has been reported in adults by McFarland and Dameshek,[4] Brody and Finch[11] and Ley and co-workers,[5] and in children by Pearson and McFarland.[12]

Indications

The most common indication for the use of the Vim-Silverman needle biopsy technique is prior failure to obtain adequate marrow particles by the aspiration method. Another important indication is the determination of total marrow cellularity, particularly in marrow hypoplasia, and in patients with neoplastic disease of the blood forming organs who are receiving chemotherapy. In certain instances, it may prove valuable in detecting the presence of metastatic or granlomatous lesions of the marrow. Such biopsy specimens have proven useful for iron and amyloid stains.[5]

Advantages

This type of needle biopsy offers a simple, safe method which can be performed easily, without delay, at the time of failure by routine aspiration. It offers a minimum of discomfort to the patient, avoids the necessity of surgical consultation, expense, and use of an operating room, and postoperative complications. Contact smears may be made from the specimen, thus offering both a histological and smear specimen for examination. A shorter period of time is required for decalcification of the specimen. There is no contamination of the specimen with bone dust, which may alter the marrow picture.

Technique

With the patient in the lateral recumbent position, with the back along the edge of the bed or examining table, the posterior superior iliac spine

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is located by palpation, and indentation marks made in the skin with the thumbnail. The skin overlying the site is cleansed with tincture of merthiolate. The skin and soft tissue is infiltrated with 1 per cent procaine down to and including the periosteum. The bone surface may be explored simultaneously to ascertain the midpoint of the iliac crest. The Vim-Silverman needle with the obturator in place is introduced, without use of a skin incision, at this point. After penetration of the boney cortex is felt, the obturator is replaced with the cutting blade which is then advanced into the marrow space with gentle pressure. The outer sheath is then advanced over the cutting blade by a forceful rotary motion. Then, holding both the needle sheath and cutting blade firmly together, the entire needle is rotated half a turn and removed as a single unit. Since the marrow plug is thicker distally, the cutting blades are re-inserted to their full length into the outer sheath, and by insertion of a 25 gauge needle between the protruding blades, the retained marrow specimen is gently forced out. Cover slip touch smears are made from the specimen, which is then dropped into a 10 per cent formalin fixation solution and allowed to stand overnight. The specimen is decalcified for two hours in 50 per cent formic acid to which WIN 3,000 ammonium salt of sulfonated resin (Winthrop) is added. After washing in tap water for two hours, the specimen is embedded in paraffin and cut sections made, which are stained with hematoxylin and eosin.

Results

The author has performed 91 bone marrow biopsies using the Vim-Silverman technique.[13] In all cases adequate marrow specimens were obtained. The method has proven valuable in determining total marrow cellularity, and presence and degree of hypoplasia or fibrosis. Accurate hematological diagnosis was made after "dry taps" were obtained by routine aspiration in leukemia, lymphosarcoma and multiple myeloma. It was possible to demonstrate the presence of suspected granulomatous lesions not detectable on routine aspiration. Serial biopsies have been obtained from patients with previous "dry taps" who are receiving various forms of chemotherapy, which have proved invaluable in determining future course and treatment. No post-biopsy complications were encountered.

Summary

Certain disadvantages exist in the bone marrow aspiration method. The Vim-Silverman needle biopsy is a safe, simple method which offers both a histological and smear specimen for examination, without resorting to surgical biopsy. The technique is described and the advantages discussed.

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Health and good estate of body are above all gold, and a strong body above infinite weatlh.—Ecclesiasticus 30:15.

Clinical Medicine

The Alveolar-Capillary Block Syndrome

Frank D. Gray, Jr., M.D.

■ The expression "alveolar-capillary block syndrome" is the physiological designation of a clinical entity characterized by dyspnea, cyanosis, and a chest Roentgenogram showing diffuse linear and nodular densities. The progress may be slow or very rapid but it is inexorable and ultimately the victim manifests all of the features of cor pulmonale.

Anatomically the syndrome consists of an expansion of the interstitial tissue elements because of edema, exudation, cellular proliferation or collagen transformation. The changes are especially prominent in the alveolar septa, but there are usually evidences of the pathological state in the intra-alveolar spaces and in the peribronchial tissue. Regardless of the initial cause, there is likely to be considerable infection and destruction of lung tissue leading to cyst-like spaces, bronchial obstruction with distal distention of air spaces, and often evidence of bronchitis and bronchiolitis. The latter changes are complications and not part of the fundamental pathology.

Because there are many different causes, and frequently complicating infections, it is difficult to express the physiological alterations due solely to the interstitial tissue changes. In general the alveolar-capillary block syndrome is associated with a rigid and restricted lung that demands an enormous work effort for both inspiration and expiration. This in itself leads to some degree of impairment of ventilation with consequent hypoxemia, but more prominent causes of the hypoxemia are related to diffusion and the distribution of ventilation and perfusion.[1] The distribution of ventilation throughout the lung in this syndrome is uneven with some spaces getting normal ventilation or better and others getting very little because the restrictive process varies from segment to segment. The poorly ventilated alveoli allow pulmonary blood to traverse capillaries without becoming fully oxygenated. Since the membrane between the alveolar space and the pulmonary capillary is thickened, the impairment of diffusion of oxygen molecules across the alveolar-capillary membrane is exaggerated and the blood leaves the capillary with an oxygen saturation scarcely higher than that of venous blood. In the early stages this diffusion difficulty is paramount. As the disease progresses the pathology affects the pulmonary vessels leading to an impaired distribution of blood flow and in the later stages virtual shunts between the pulmonary arteries and veins lead venous blood into the arterial system without exposure to ventilated alveoli.[1] All of these factors lead to a severe degree of hypoxemia, usually with only moderate hypercapnia. In fact, in the early stages the arterial blood carbon dioxide tension may be lower than normal because of hyperventilation stimulated by hypoxemia.

Associated with the hypoxemia is polycythemia and a high cardiac output. The resistance to blood flow increases owing to the destruction of part of the pulmonary vascular bed, and possibly to vasoconstriction induced by hypoxia. The polycythemia further aggravates the situation by increasing the blood viscosity. These factors raising the vascular resistance together with the higher cardiac output lead to an overwhelming rise in pulmonary arterial pressure which in turn is responsible for the failure of the right ventricle. The finger clubbing associated with many cases of alveolar-capillary block is also probably related to the hypoxemia.

The diseases which are known to be associated with the alveolar-capillary block syndrome are grouped in several categories:

1. The granulomas such as sarcoidosis, pulmonary tuberculosis, berylliosis and eosinophilic granuloma.
2. Interstitial pneumonia including the rapidly progressive form described by Hammon and Rich, and some viral infections.
3. Collagen diseases, especially some cases of lupus erythematosis and scleroderma.
4. Edema and passive congestion of the lung.

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5. Lipoid pneumonia, pneumoconiosis, and possibly other diseases caused by the inhalation of air pollutants.

6. Radiation fibrosis.

Probably the best known form of this disease is the Hammon-Rich syndrome. There is considerable disagreement in the current medical literature about the meaning of this expression, but if one accepts it strictly in the terms described by Drs. Hammon and Rich it is a rare entity. In 1935 these authors first described four cases of rapidly progressive interstitial fibrosis leading insidiously to severe respiratory insufficiency and death.[2] They elaborated on the syndrome and added a case in 1944.[3] The pathology as described by them consisted of widespread connective tissue hyperplasia throughout the interstitial structures. The alveolar walls were tremendously thickened and crowded with fibroblasts until the latter were replaced by scar tissue. There was intra-alveolar edema and hemorrhage, but a paucity of intra-alveolar cellular inflammatory exudates. They noticed a fibrin deposit in the walls forming a hyaline membrane. In their report they stated that Dr. Winternitz had reviewed their material and noted a similarity to the influenzal pneumonias which he had been studying experimentally. Others have noted a similarity to the hyaline membrane disease of infants.

As indicated above, wide differences of opinion occur as to whether this is a specific entity or just one manifestation of a wide gamut of diseases. Hammon and Rich themselves felt that this was some type of specific and acutely progressive inflammatory disease although they acknowledged that there might be more than one etiological agent. Later Rubin and Lubliner, in a review, implied that the Hammon-Rich syndrome and chronic interstitial fibrosis are all part of the same disease with variable rates of progress.[4] More recently Scadding reviewed the available information and concluded that the acute form is different from the more chronic type, the latter being quite common.[5]

The nature of the target tissue is also a matter of difference of opinion. Golden and Bronk described it in terms of a reticuloangiosis,[6] and their description was, to some extent, supported by the studies of Anderson and Foraker.[7] On the other hand, Gross felt that the alveolar cell is the target tissue.[8] If one uses influenza virus infection of the lung as a prototype, it seems likely that the target tissue is multiple with the virus attacking the capillary wall endothelium in one phase and injuring the alveolar cell and interstitial tissue in another.

The question of treatment is also subject to dispute. Peabody et al. claimed that results with corticoids varied from poor to disasterous in their report of 1953.[9] Subsequently others, including Baglio and co-workers, have indicated that properly used, corticoid therapy is valuable.[10] In our experience it is essential to make a careful etiological diagnosis. In the presence of sarcoidosis, collagen disease, and beryllium disease corticoid therapy is of great importance and offers considerable hope for a good prognosis. In the idiopathic group, perhaps including the virus and bacterial infections, corticoids seem to have little to offer except for the severe respiratory insufficiency that may occur associated with acute exacerbations of bronchitis. However, with X-ray evidence of progression of the process, a trial of this therapy should be carried out because of the otherwise relentless and deplorable ravages of the disease.

Summary

The alveolar-capillary block syndrome consists of an interstitial tissue proliferation due to a variety of causes and leading to hypoxemia and cor pulmonale. The pathological process interferes with the pulmonary distribution of ventilation and the diffusion of oxygen across the alveolar-capillary membrane. In many cases corticoid therapy is helpful.

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SUMMARY OF PROCEEDINGS HOUSE OF DELEGATES — SEMI-ANNUAL MEETING

Bridgeport, Connecticut — December 9, 1964

Reports, Addresses And Remarks

Presentations were made to the House as follows:

Reports

The Treasurer: Presented by Frank K. Abbot, Waterbury, in the absence of Isadore S. Goldberg, Torrington.

The Council: Presented by Stevens J. Martin, Hartford, Chairman.

AMA Delegates: Presented by Norman H. Gardner, East Hampton
James R. Cullen, Hartford
Ellwood C. Weise, Sr., Bridgeport
Max Caplan, Meriden, (Alternate)

Remarks

The President: Ralph L. Gilman, Storrs

The General Manager: William R. Richards, New Haven

Those presentations submitted in writing will be published in this and subsequent issues of Connecticut Medicine.

The 1965 Budget

The House approved the 1965 Budget, as prepared and submitted by the Council, and set CSMS membership dues for 1965 at $45.00 (unchanged from 1964). Also approved was a recommendation that, starting in 1965, the President and President-Elect of the Society be authorized to attend the annual and interim meetings of the AMA House of Delegates during their tenures of office, and that they be reimbursed for usual expenses incurred by such attendance.

Old Business

(1) Admendments To The Bylaws

a. It was VOTED to amend Article X—Committees of the Council, Section 2—Standing Committees of the Council, so as to delete entirely the provision for a "Liaison Committee with CMS, Inc."

b. It was VOTED to amend Article IV—Membership, Section 1 — Active Members, and Section 4—Life Members, as follows:

ARTICE IV — MEMBERSHIP

Section 1. Active Members.

Par. 1—Active Membership shall be limited to those members of component associations who are certified to the General Manager of The Society as entitled to exercise all rights of membership in their component associations including the rights to vote and hold office. A physician eligible for Active Membership in The Society becomes an Active Member of The Society on receipt by the General Manager of The Society of dues prescribed by the Society unless he is exempted from payment of dues as provided in Article XII.

Par. 2 (new)—Active Members ceasing to be in good standing or ceasing to be members of their component associations shall ipso facto have the same status in The Society. Any Active Member expelled from his component association or placed under suspension by his component association shall ipso facto have the same status in The Society, but his right to appeal his expulsion or suspension to The Society shall not be impaired thereby. For purposes of definitions: (a) An Active Member who is expelled from membership in The Society shall have his name removed from the roster of members of The Society by the Secretary, and will not again be eligible for Active Membership in The Society until he is certified to the General Manager as being a member in good standing of a component association. (b) An Active Member under suspension from The Society shall remain a member of The Society and shall be required to pay membership dues to The Society, but shall be denied the rights to vote and hold office during the period of his suspension.

Section 4. Life Members.

Par. 1—"Any member of The Society who has been . . . hold office." (Same as present Section 4 in its entirety).

Par. 2 (new)—Life Members ceasing to be in good standing or ceasing to be members of their component associations shall ipso facto have the same status in The Society. Except for the payment of membership dues, from which they are exempt, the conditions and restrictions applying to Life Members who have been expelled or are under suspension shall be the same as for Active Members.

c. It was VOTED to amend Article VII—The Council, Section 1—Powers and Duties, Paragraph 4—Censorship, as follows:

ARTICLE VII — THE COUNCIL

Section 1. Powers and Duties

Par. 4. *Censorship.* The Council shall be the Board of Censors of The Society. It shall consider all questions involving the rights and standing of members in relation to the public, to other members, to the component associations, and to The Society. All questions of an ethical nature brought before the House of Delegates or a general meeting of The Society shall be referred to the Council without discussion. It shall receive, review and rule upon appeals on all questions of discipline affecting the conduct of members of the component associations on which an appeal is taken, and its decisions in all such matters shall be final.

(All New) In hearing an appeal from a disciplinary decision of a component association, the Council and/or its elected Committee on Preliminary Study of Censorship Questions shall strive at all times to limit such hearing to a review of records and other materials furnished by the component association and/or by the appellant for the purpose of determining matters of fact and procedure relative to the hearing conducted by the component association. On occasion and in its own discretion, however, the Council and/or its elected Committee on Preliminary Study of Censorship Questions may call such witnesses and elicit such testimony as may be considered necessary to arriving at a fair and considered judgment.

The Council shall serve as a board of review for cases of claimed malpractice referred to it by the Committee on Medical Ethics and Deportment of any component association.

(2) Resolution On General Practice—House Of Delegates, April 28, 1964

Progress Report: It was VOTED to accept a progress report filed by the Council (prepared by its Ad Hoc Committee, chaired by Waldo E. Martin, Milford) on the implementation of this Resolution, which reads as follows:

"After a careful study and review of the present status and activities in the area of General Practice in the State of Connecticut, your committee has made the following suggestions.

The term General Practice may be changed to Family Practice. In order to stimulate the interest of new medical students in Family Practice, there should be a program within the medical school which will encourage and prepare students for Family Practice. A proposed program may be outlined in 3 general areas:

I. Undergraduate Medical Education
II. House Staff or Residency Training
III. Postgraduate or Continuing Medical Education for Practicing Physicians

In an effort to implement Resolution 68, your Chairman met with Dr. Arthur Ebbert, Jr., Associate Dean of Yale University School of Medicine to discuss a program to include these three general areas. As a result of our discussion, the following initial steps may be taken.

I. Undergraduate Medical Education

It is suggested that a panel on Preparation for Family Practice be held at the Medical School in the Spring of 1965. It is hoped that this will be sponsored by some student organization. The panel would consist of two general practitioners, a member of the faculty of Yale Medical School and Associate Dean Ebbert as Moderator.

2. General Practitioners invited to attend and participate in some of the teaching conferences at the school, e.g., Interdepartmental clinical conferences held Tuesday and Thursday at noon.

3. The school does not wish to have students on preceptorships during the regular academic year, but students may elect to do this during the summer months or vacation periods.

II. House Staff or Residency Training

The possibility of residency program in Family Practice being set up at the Yale-New Haven Medical Center which will supervise residents who will train and rotate in one or more community hospitals. Financial support of this program must be arranged.

III. Postgraduate Medical Education for Practicing Physicians

There has been considerable activity by the Yale School of Medicine in these programs, which are arranged with the Connecticut Academy of General Practice and given annually throughout the state. Special medical conferences open to all practicing physicians in the state are held at Grace-New Haven Hospital and other hospitals during the year.

Your ad hoc committee feels that the status of the family practitioner has a great influence on the undergraduate medical students. The possibility of a Board of Family Practice and the formation of a General Practice Department in hospitals, or the integration of the General Practitioner in the various departments of our hospitals, is of paramount importance for the success of this program. At present, the majority of our hospitals in Connecticut have engaged in one or the other of these programs. There is much room for improvement in some of our teaching hospitals. Steps are now being taken by the Academy of General Practice to consider the formation of a Board of Family Practice.

Dean Stowe of the University of Connecticut School of Medicine and Dentistry has assured us that his group is sympathetic to the need for Family Practice. He hopes that when the goals of the Family Practice Program are clarified, the medical school can help meet these goals.

Your committee plans to meet with Associate Dean Ebbert and Dean Stowe of the University of Connecticut Medical School to continue discussions for the further implementation of the resolution on General Practice.

Respectfully submitted,

Waldo E. Martin, Milford, *Chairman.*
E. Tremain Bradley, Norwalk.
Ralph L. Gilman, Storrs.
Michael V. Gualtieri, Waterbury.
Denis S. O'Connor, New Haven.
William M. Shepard, Putnam.

(3) Relative Value Study

Progress Report: It was VOTED to accept a progress report of the Council, presented by Stewart P. Seigle, Hartford, Chairman of the Relative Value Study Committee. The essence of the report was that the work of the Committee is nearing completion, and that a Relative Value Scale and recommendations as to its uses by the Society will be ready for presentation to the House of Delegates at the 1965 Annual Meeting in April at the latest.

(4) Corporate Gift To COMPAC

Pursuant to an April 28, 1964 directive of the House, the Council reported that it had voted to make a corporate gift to the Connecticut Medical Political Action Committee in the amount of $3,000 (from general funds), such gift to be used by COMPAC, for *political education purposes only.* Several Directors of COMPAC, who were members of the House, extended thanks and appreciation to the Society on behalf of the COMPAC Board.

New Business

Proposed Amendment To The Bylaws

Introduced by the Council, a series of proposed amendments to Article X—Committees of the Council, Section 3—Representatives and Advisors, Paragraphs 1 and 13—Delegates to Other State Medical Societies and Special Societies, were received and tabled without discussion until the next regular meeting of the House. The purpose of the proposed amendments is to define the qualifications and duties of such delegates, and to separate the two categories of delegates which are combined in the present bylaws.

REPORT OF THE COUNCIL

Mr. Speaker, Mr. President, Members of the House and Distinguished Guests

The Council has held five meetings since the adjournment of the House on April 28, 1964. All meetings have been well attended, with an average of 19 out of a possible 29 members being present, and for the first time in our contemporary history there has been no need to call a special session.

Little purpose would be served by my recounting to you each and every matter which has come before the Council and reporting to you on every decision that has been reached. All Delegates continue to receive printed copies of the minutes of our meetings, and I am most hopeful that all of you take time to read them in order to keep posted on the important problems facing medicine in Connecticut today.

For emphasis, however, I wish to enlarge upon several selected items of business which have occupied the Council's time and attention during the past seven months.

(1 *Organization of the Council:* At its May meeting, the Council organized itself for the year now in progress. Your reporter was honored and privileged to be elected Chairman for a second term, and the various standing and special committees were appointed. In no spirit of self-aggrandizement, I think it should be appreciated that those who take on these added assignments voluntarily commit themselves to extra work and to a greater amount of time away from their practices— a not inconsiderable sacrifice for busy professional men. But it is only through such a spirit of dedicated participation that our Society can try to cope with the ever-increasing challenges which confront us. I trust that in our deliberations here in this room, we will *all* be imbued with a similar spirit.

(2) *The Chemical Test for Intoxication Law:* Among the first matters to come before this year's Council were two recommendations—one from the Committee on Public Health and the other from the Committee on State Legislation—which dealt with support of Public Act 616, the "Chemical Test for Intoxication Law." Having some doubt as to the vulnerability to civil suit of physicians who draw blood samples for analysis under this law, the Council sought legal opinion before arriving at a decision in the matter. Excerpts from the opinion prepared by Wiggin and Dana were published in the June issue of *Connecticut Medicine* for the information of our members. Being assured that the civil liability of the physician in cooperating with law enforcement agencies is minimal, the Council adopted a resolution which reads as follows:

> "Be It Resolved: That the Council . . . appeal to all members of the Society to accept whatever responsibility is properly asked of them by law enforcement officers and administrators in making chemical tests for alcohol intoxication on motor vehicle operators."

Pursuant to this action, the Council directed the Committee on State Legislation to prepare and have introduced at the next session of the General Assembly a bill to amend Public Act 616 so as to absolve physicians of liability to civil suit for drawing blood samples, except in cases of professional negligence.

(3) *The Medicare Contract for 1964-65:* Being advised by Dr. Robert R. Berneike of New Haven, Chairman of the Committee on Medicare Plan, that the Medicare Contract submitted for 1964-65 included a provision to cover the dependents of NATO personnel on the same basis as the dependents of United States servicemen, the Council voted *not* to approve the contract unless this provision was deleted. Although most of our past recommendations to the Office of Dependents Medical Care have received short shrift, I am happy to report that on this isolated occasion we were successful in scoring a minor victory over bureaucracy. The NATO provision was removed from the 1964-65 Medicare Agreement, and our President was then pleased to sign it—in sextuplicate!

(4) *Connecticut Medical Service, Inc.:* While our formerly time-consuming negotiations with CMS came to a rather abrupt end as a consequence of the actions of the House last April, there are a few follow-up "bits and pieces" to be reported on. Shortly after our Spring meeting, the President of CMS informed the Council that appropriate changes in the Corporation's bylaws were being made to eliminate reference to the Society as an active participant in its affairs, and that the phrase "Sponsored by the Connecticut State Medical Society" would be removed from CMS contracts, promotional literature and administrative forms.

Next, several physician members of the Board and of the Medical Advisory Committee requested direction from the Council as to whether they should continue on in their respective capacities in CMS. In response to these requests for direction, the Council offered an opinion as follows: "That the question of whether the termination of the Society's sponsorship of CMS does or does not impair the effective continuance of the services of the physician Directors of CMS and the officers and members of the Medical Advisory Committee is a matter for individual decision, and that the physicians concerned should feel no obligation to the Society, one way or the other." All physician Directors and all members of the Medical Advisory Committee were informed of this opinion of the Council by letter on the 22nd of May. At the same time, the presidents of the component associations were notified of this action and advised that, concerning the MAC, the action was not applicable to those members nominated by their county organizations. I understand that several associations have since declined to make further nominations for service with the Advisory Committee.

And finally, on October 28, the Council voted *not* to renew the Journal advertising contract with CMS when the present contract expires in January, 1965, and also *not* to invite CMS to exhibit at our next annual Meeting. These actions were taken in response to a protest filed by the Board of Governors of the New Haven Associations, which apparently feels that for the Society to continue to offer its members CMS promotional materials is out of keeping with the circumstances which led to the House of Delegates' decision on sponsorship of CMS made earlier this year. I cannot tell you that the vote on these questions was unanimous, because it was not, but a majority were in agreement that adherence to basic principles outweighed all other pertinent factors. The Council was subsequently informed that the Board of Directors of Hartford County disapproved of its decisions, but since the Board offered no reasons for disapproving, a motion to reconsider was superseded by a motion to table and the latter was adopted without further discussion.

(5) *Corporate Gift to COMPAC:* As directed by the House of Delegates at its last meeting, the Council gave prompt attention to determining whether the Society could properly make a corporate gift to the Connecticut Medical Political Action Committee and, if so, what the appropriate amount of such a gift ought to be. Early in the Summer, we were advised by legal counsel that the Society was classified as "charitable and educational" by the Internal Revenue Service, and that such classification would preclude making any contribution at all to COMPAC. However, in October the Council was informed that the Internal Revenue Service has since found the Society to have a "business league" classification, and our attorneys then concurred in the opinion that to make a gift to COMPAC would be permissable. Accordingly, at its November meeting, the Council voted to make a grant to COMPAC of $3,000 out of general funds, such grant to be used by COMPAC for political education purposes only. In all fairness, I must report that although there was an appreciable division of opinion on this question, there was practically unanimous agreement that it would be advantageous to all concerned for COMPAC to make periodic reports to the Council on its activities, particularly with respect to programs conducted to educate physicians and their wives in matters political.

(6) *April Resolution of the House of Delegates on General Practice:* On April 28, 1964, the House directed the Council to implement the resolution on General Practice which was adopted on that date. Carrying out the directive, the Council appointed an Ad Hoc Committee, chaired by Waldo E. Martin, Milford, to undertake this assignment. In your Delegates' Handbook, on Pages 10 and 11, you will find a progress report on implementing the resolution which has been prepared by Dr. Martin's Committee and approved by the Council for submission to the House. It is expected that the findings and tentative plans outlined in this progress report will be pursued, and that a definitive report will be filed with the House at a later date.

(7) *Medical Assistance for the Aged:* At the recommendation of the Committee on Aging and the Committees on Legislation, the Council directed our staff to prepare and distribute an informative pamphlet on Connecticut's MAA—or Kerr-Mills—program. A copy of the pamphlet was mailed to every member of the Society and to many other individuals and agencies known to have medical dealings with older people and their families. At this writing, some 14,000 leaflets have been sent out from St. Ronan Street and requests for more are being received week after week. The response to this project indicates that altogether too many Connecticut residents do not even know of the existence of the MAA program, despite the fact that it has been in operation for more than two years, and it behooves every physician who sees patients—in whatever age group—to keep a supply of these pamphlets available in his waiting room. After all, the mother of a pediatric patient may have parents or other relatives who could benefit from Kerr-Mills assistance, even though she herself is decades away from the eligible age of sixty-five.

During Community Health Week in late October, in cooperation with the AMA and the county associations, the Society placed paid advertisements in all of Connecticut's daily and weekly newspapers concerning medical care and health opportunities in our State. This undertaking, coupled with the distribution of the MAA pamphlet, appeared to be very well received by the public—if we can judge by the number of mail and telephone inquiries which came in, and encourages us to continue our efforts to disseminate information about Medicine's alternative to so-called "medicare"—i.e., a combination of voluntary health insurance and state-administered assistance programs.

(8) *Amendments to the Bylaws:* On November 19, the Council's Subcommittee to Study and Revise the Bylaws made a report with recommendations on a number of items which had been referred to it from various sources, and it was voted to accept the Subcommittee's report as presented.

There were four *negative* recommendations as follows:

(a) That the Alternate AMA Delegates *not* be made members of the Council at this time.

(b) That the Society *not* establish a "Judicial Council" or similar body to rule on questions of ethics and set ethical precedents.

(c) That the criteria for eligibility for Life Membership *not* be changed, and

(d) That the criteria for exemption from payment of Society membership dues *not* be made more specific than presently outlined in the Bylaws.

The Subcommittee's report contained three *positive* recommendations for amending the Bylaws, and these are before you today. There are several minor errors in chronology in two items of this report printed in your Handbook and, at the time they are taken up, I shall ask the General Manager to advise you as to the corrections which should be made. Suffice it to say, these minor changes will have no bearing on the items themselves.

(a) On pages 4 and 5 (if you will please follow in your book), appears a proposed amendent dealing with the definition of "expulsion" and "suspension" with respect to CSMS membership. As directed by the House at the Semi-Annual Meeting of 1963, the Council has given this matter "further study" and now recommends the adoption of the "New Proposal" which begins about half-way down on Page 4.

(b) On pages 6 through 9, appears a proposed amendment dealing with the scope and limitation of the powers of the Council as the Board of Censors of the Society. As directed by the House at our Spring meeting this year, the Council has given "further study" to the amendment proposed by the Hartford Association, and now recommends the adoption of the "New Proposal" which starts at the mid-point of Page 6.

(c) On Page 16, the Council presents an entirely new proposed amendment dealing with our delegates to state medical societies and special societies. Its purpose is clear, and the Council recommends its adoption at the next meeting of the House, after the provisions of the Bylaws concerning amendments have been complied with.

(9) *The 1965 Budget:* On Pages 12 through 14 of your Handbook appears the Budget approved by the Council for 1965. Although the Council is the "finance committee" of the Society, a committee chaired by Isadore S. Goldberg, our Treasurer, did most of the hard work associated with the preparation of this report. In Dr. Goldberg's absence today, I believe Dr. Frank K. Abbot—a member of the Committee—will present the details on certain major items which perhaps need some special explanation, and will be prepared to answer any questions you may have.

(10) *"The Five-Year Plan":* At the September meeting, the Council was asked to consider endorsing the report and conclusions of a "Five-Year Plan for Chronic Illness and Health of the Aging Activities, Connecticut" which was submitted by Dr. Harold S. Barrett, our Deputy Commissioner of Health and Director of the Planning Project. The report was prepared by an Ad Hoc group of some 150 people, representing many private and public health agencies, under a grant from the United States Public Health Service. As you may know, similar but separate studies are being made in Connecticut—and under similar grants—in the fields of mental health and mental retardation. The report on the "Five-Year Plan" ran to 140 pages of highly-technical material plus a number of attached charts and graphs, and I need hardly tell you that it would have been physically impossible for all members of the Council to read it through from cover to cover. However, Drs. Gilman and Richards gave a good many hours of careful study to the report and presented to the Council its "high spots" as they understood them to be. With this background, and after a review of the "conclusions"—twenty-three in number—the Council voted *not* to endorse the report as presented and to inform Dr. Barrett and his Ad Hoc Group of some of the items on which the Council felt clarification was needed.

Dr. Barrett and his associates in the planning project evidently felt that most of the criticisms we offered were constructive in nature since, in a matter of days after they received the Council's communication, they requested to meet with the Council for the purpose of clarifying the meaning of the items referred to. Accordingly, on October 28, Drs. Foote, Barrett, Hiscock, Beckett and Chaucer joined the Council meeting and presented their views. For the Council, Dr. Gilman described our collective concern by stating that the Plan seemed to call for the setting up of a central government agency in Connecticut which, with authority to "coordinate" the work of all voluntary and state agencies and facilities operating in the subject areas of the report, might eventually assume control over these agencies and even over the efforts of private practitioners of medicine in these fields.

Drs. Foote and Barrett assured the Council that such was certainly not the intent of the "Plan" and that no program developed in chronic illness or aging would result in "control" over voluntary groups or private individuals.

Acting on a suggestion of Commissioner Foote, the Council has enlarged its committee of representatives to the "Five-Year Plan" to give assistance and advice in all ways possible. Anticipating that the final report will be shortened considerably and the conclusions made more clear, I can assure you that the Council is retaining a completely open mind toward being asked to consider the Plan again for possible endorsement on behalf of the Society.

(11) *The Relative Value Study:* The Council has been keenly aware of the need for completing the Relative Value Study, which was begun some five years ago. Having been informed that Dr. Benjamin D. Thaw of Hartford, who has been chairman of the Committee since the outset, was no longer in a position to give adequate time to the project, the Council appointed Dr. Stewart P. Seigle, also of Hartford, to serve as Chairman in Dr. Thaw's stead. I am pleased to report that Dr. Seigle has addressed himself most diligently to the task of completing the work of the Committee, and will tell you of the progress he is making toward this end at a later point in our meeting today.

(12) *General:* The Council has a number of continuing activities under way on which I can offer you no definitive report at this time. A partial list of these would include:

(a) The corporate practice of medicine and the Blue Cross Outpatient Rider, the work of Dr. Grendon's Committee on these subjects.

(b) Further studies on the development of an improved type of prepayment or insurance plan which are being pursued by Dr. Bradley's Committee on House of Delegates Resolution No. 2.

(c) The preparation of a supplementary report on hospital costs and accounting procedures by Dr. Trifari's Committee on Hospitals, as directed by the House last Spring.

(d) Participation in a group of health professionals which is studying the problems of financing medical care for premature and sick newborn infants. Drs. Rowley and Larson of Hartford are our representatives to this study.

(e) Preparation for introduction at the next General Assembly of legislation dealing with such matters as "the abused child," the right of ophthalmologists to fit contact lenses and other optical devices for their own patients, the confidentiality of hospital tissue committee records, and—as I mentioned earlier—immunity from civil suit of physicians drawing blood samples under the Chemical Test for Intoxication Law. These assignments are being carried out by Dr. Friedberg and his Committee on State Legislation.

(f) A continuing interest in matters pertaining to hospital planning, both at local and state levels. The county associations in which planning groups already exist have been urged to seek participation in these groups and, at state level, the Council—with the help of the Committee on Hospitals—has several times repeated a request to be invited to participate in a "statewide planning" program which the Connecticut Hospital Association has had under consideration since last year.

CONCLUSION

In conclusion, may I again express my thanks for the honor and privilege of serving the Society as Chairman of the Executive Committee of this House; for the wholehearted cooperation I have received from the members of the Council; for the untiring efforts and determined leadership of our President, Dr. Ralph Gilman; and for the invaluable assistance we all continue to receive from Mrs. Lindquist and Dr. Richards.

Respectfully submitted,
Stevens J. Martin, M.D.
Chairman.

REMARKS OF THE GENERAL MANAGER

Mr. Speaker, Mr. President, Members and
Guests of the House:

In preparing these remarks for presentation to the House today, I found myself in a position not unlike that of the beginning practitioner who was asked by his very first private patient just what was wrong. His mind being completely blank as to a plausible diagnosis, the medic stalled for time by inquiring if the condition had ever appeared before. "Oh, yes, doctor—many times!" the ailing one replied. "Aha!" cried the young physician, his professional embarrassment greatly relieved, "then it's just as I thought, sir—you've got it again!"

At our semi-annual meeting in 1962, it was reported that the Delegates to the American Medical Association (at their just-concluded interim session of that year) had voted not to fortify or give clearer definition to the Association's long-established position on Social Security medicine, but had been content to remind themselves that an extraordinary meeting of the House might have to be called (and I quote) "should the physicians of the United States and its territories be confronted with a serious threat which would conscript them into involuntary servitude." On that occasion, I shared the doubt of many others that we could afford the luxury of following a "wait and see" policy much longer.

And yet now—just twenty-four months later—it is reported that medicine's national legislative body has once more determined that our opposition to "medicare" shall remain as it has been—firm and uncompromising, and that should enactment of some type of King-Anderson proposal seem imminent after the 89th Congress convenes, an extraordinary meeting of the House may have to be called to deal with such a crisis. In other words—so it seems to me, whatever it was we had confronting us back in 1962, we've got it again—only more so! And I still have doubt that putting all our eggs in the basket of "wait and see" is, in itself, likely to save the day for very long.

Confirmed optimists will continue to tell us that the November election landslide was not necessarily a mandate for "medicare," but most political experts are predicting that the make-up of the new House and Senate will be such as to give the President just about anything he asks for by way of social legislation—always assuming, of course, that some major international crisis does not arise to create a distraction. Informed sources report that two health study teams, headed up by Dr. Michael DeBakey and Dr. George James, will undoubedly recommend to Mr. Johnson that he seek to extend government responsibility for medical treatment far beyond the comparatively limited scope of last year's King-Anderson Bill. Many of the people engaged in these studies have long been associated with movements to set up a modified form of Britain's national health service over here, and it therefore seems probable—if not inevitable—that with the advice and consent of the Administration's little-known behind the scene "planners," it will be decided that conditions are "AOK" and "go" for trying to push through a 1965 version of the Murray-Wagner-Dingell package of nearly two decades ago. So those who are calling on the AMA to "compromise" its opposition to Federal health benefits for the aging might just as well begin to extend their plans for compromising—if they think that's best—right on through to a complete system of government-controlled medicine.

As so many Republicans are saying these days: "Our purpose must be to unite—not divide." And in medicine, we too need unity. Yet it is certainly no secret that there is division of opinion in our ranks, and that the major source of support for expanding government medical care lies with physicians who labor in the more academic fields—men who are not engaged in private practice and whose principal income already derives from Washington, directly or indirectly. One need not be in any sense critical of their views, or of the Federally-subsidized educational and research programs into which it is claimed that 20 per cent or more of our medical school graduates are drifting, to be able to understand that doctors engaged in such work under such circumstances would have little reason to be concerned about the intrusion of government into the very personal patient-physician relationship and the individual medical judgments which are the keystones of private practice.

Yet it is an established fact that private practitioners—singly and in groups—make up better than 80 per cent of the nation's entire physician population, and that they still are providing more than 90 per cent of American patient care, in their offices and in their patient's homes. On this account, it seems to me only fair that—being in the majority—their views should receive properly weighted consideration when proposals are advanced which would drastically alter the basic structure of our traditional free-choice system. Certainly it would be their way of life that would be most disrupted if professional decisions become subject to stringent regulation—which drugs may be prescribed; which patients may be admitted to which hospitals; which laboratory tests are authorized and which are not; and so forth. And let no one delude himself that such regulation would not be part and parcel of the new medical order now under study in a number of quarters.

Shortly after the recent elections, an unsuccessful political aspirant came to me and said: "I just can't understand why I failed to get the support of doctors. I talked to a great many of them during the campaign—individually and in groups—and most of them seemed to favor my views on the important issues, including 'medicare.' Yet with the exception of a dedicated few, they didn't go to bat for me at all—financially or any other way. What's the matter with you people?" I believe I could have given him a pretty sound answer to his question but I begged off. I didn't even dare to try—and for a very good reason.

In its professional sphere, medicine is acknowledged to be the most disciplined of callings. But in its collective socio-economic and politico-legislative activities, it is sometimes about the last word in disorganization. Let one aroused physician but rise to speak up forcefully on behalf of his fellows, and his representations are more likely than not to be discounted—not by some hostile lay audience, but by his colleagues themselves.

It is not for me to try to explain this all-too-frequent division of purpose among us, but of one thing I am convinced. It is our greatest weakness—the Achilles heel which seems common to all men of medicine that has led most of them down the no-return road to oppressive regimentation throughout the civilized world. American physicians are right now hanging precariously from the edge of the same cliff from which their counterparts in England and Belgium and Italy and France and Japan and practically everywhere else have fallen, one by one, into the unposted morass of government-regulated practice. And yet many contniue to "wait and see" —to turn the back of apathy toward people who are on *their* side—and to entertain pleasant dreams of "compromising" themselves out of their difficulties in the hope of getting peace in their time.

Yes, these are indeed desperate days for American medicine as most of us have known and cherished it. After twenty years of doing battle to preserve a free-choice system, we find ourselves apparently nearer to defeat than ever before. And after all our efforts to educate the public and the politicians—after the presentation of facts and figures to document the proud record of accomplishment of our American system—the hour of forced capitulation seems closer at hand than at any previous time.

There are a few bright spots, however. Many unbiased polls indicate that the public is far more sympathetic toward our views today than was the case a year ago. With better understanding of what is at stake, it appears that people's earlier enthusiasm for Social Security medicine may be on the wane—despite their recent decision in the voting booths. They have heard what the politicians have had to say, and now they are waiting to see what kind of leadership the medical profession will demonstrate. They don't really need to be told of our opposition to "medicare"—they already know about that, nor do I think they have any special interest in having us rush forward with a melange of ill-conceived so-called "alternatives." In my judgment, the public is waiting to see if the doctors of America—the men that they are in such personal contact with in their own communities, are going to quietly lie down and be counted out as first-class citizens of a free nation, or whether they are going to put up a fight for what is right and best and worthy of preservation.

There is no time now to go into detail, but, in my opinion, the principal efforts of the AMA, of this Society, and of our county components, should not be directed to passing more resolutions—with twenty-three "whereases" and a half-dozen "resolves," but toward convincing every private practitioner that his professional freedom is in grave danger; that he need not be apologetic for the American system of health and patient care, and that, in the long pull, of far greater importance than any lofty pronouncements of his medical organizations is his own willingness to unite with his fellows in common cause. While I make no specific recommendation in this regard, I would be gratified if this House would take some action to set a course for the Society in that direction. This seems to be the thinking of many in all parts of the country, and there is no good reason why Connecticut should not be in the forefront in such an undertaking.

In conclusion, let me offer you a few stirring words spoken recently by a contemporary American of some reknown. He said: "(It is possible for us) to survive anything if we don't lose our heads and throw away the one thing that has made this country great—and that's our freedom." Now, during the late-lamented campaign, this kind of inspirational talk was pretty widely hooted down as being "ideology"—nothing about it constituted a "positive" program to move the country ahead. Now I'm a sore loser, I admit, but it is interesting to me to note that we are given this sage advice not by the soundly defeated Senator from Arizona, but by a very practical and hard-headed politician named Harry S. Truman. It is my hope that every doctor across the nation may take these words to heart, and will remember them well in the critical days ahead.

Respectfully submitted,
William R. Richards, m.d.
General Manager.

FROM THE GENERAL MANAGER'S OFFICE

William R. Richards, m.d., *General Manager*
160 St. Ronan Street, New Haven, Conn.
Telephone 865 0587

James G. Burch
Assistant to General Manager

Josephine P. Lindquist
Director of Public Relations

Please Read **Please Read** **Please Read**

IMPORTANT ANNOUNCEMENT
"Readership Survey" Questionnaire

In the General Manager's Section of the December issue, announcement was made that a "Readership Survey" questionnaire would be mailed out to all members during the month of January. The questionnaire will be sent in a specially marked envelope as a self-addressed, self-sealing document requiring no postage.

Since the results of this survey will be of considerable importance to the future format and content of Connecticut Medicine, as wide member participation as possible is urgently sought. Please be on the lookout for the questionnaire, complete it, and return it to 160 St. Ronan Street, New Haven, before January 31, 1965.

SUMMARY OF ACTIONS
COUNCIL MEETING
Thursday, November 19, 1964

I. Attendance

Present in addition to the Chairman, Dr. S. J. Martin, were: Drs. Gilman, O'Connor, Goldberg, Weise, Sr., Gardner, Bradley, Grendon, Egan, Caplan, Shepard, Ayres, Rogol, Ciarecclli, Fabro, Abbot, W. Martin, Spitz and Major. Also present: Mrs. Linquist, Dr. Richards. Absent were: Drs. Cullen, Hess, Brandon, Davis, Pitock, Phillips, Hughes, Seigle, Epstein and Hastings.

II. Routine Business

Approval Of Minutes

As printed and distributed, it was VOTED to approve the minutes of the meeting of October 28, 1964.

Life Membership

It was VOTED to approve the application for Life Membership of the following eligible Active Member:

C. John Satti, New London (NLCMA).

Resignation—Committee On Third Party Payments

It was VOTED to accept the resignation of Joseph J. Formica, New Britain, as a member of this Committee.

Intern-Resident Loan

It was VOTED to grant an intern-resident loan of $500 to Stewart Atkinson, Jr., M.D., an intern at St. Francis Hospital, Hartford, for a period of 4 years and under the conditions stipulated for granting such loans.

Representatives To State Planning Council For Hospital And Medical Facilities Survey

At the request of Commissioner Foote, it was VOTED to reappoint two CSMS representatives to this Planning Council as follows:

Karl T. Phillips, Putnam
William Mac Shepard, Putnam

Drs. Phillips and Shepard have been serving the Society in this capacity for the past several years.

Election Of Student Members

It was VOTED to elect 14 Connecticut residents who are attending schools of medicine to Student Membership in the Society. The names of the new Student Members will be published in the Journal.

Communication—Committee On Aging

Acting on a recommendation of the Committee on Aging that all members of the Society should be notified that it is their "obligation" to disseminate information about the MAA Program (Kerr-Mills), it was VOTED to advise the Committee of the Council's plan to continue to publicize and distribute the MAA pamphlet, prepared in September, and to encourage individual physicians to obtain these from the Society's office and make them available to patients in their waiting rooms.

Communication—Connecticut Hospital Association

It was VOTED to receive as information a message from Edgar L. Geibel, President of CHA, that the willingness of the Society to participate in the development of programs for statewide hospital planning is "heartening" to CHA, and that "the participation of various medical groups" will be sought when and if CHA gets the subject on the way.

Progress Report—Committee To Study Staff Structure

Reporting for Dr. Hess, who was not at the meeting, the General Manager informed the Council that the Ad Hoc Committee had voted to engage a PR consultant to make a survey of the Society's PR operations and needs, and that Dr. Hess planned to make formal arrangements to have this done unless the Council had objection to same. Expressing no objection, the Council received this progress report as information.

Date Of Next Meeting

It was VOTED to authorize the Chairman to set the date for the next meeting.

III. Old, New And Special Business

1965 Annual Budget

Isadore S. Goldberg, Treasurer, presented the report and recommendations of the Budget Committee for 1965. It was VOTED to approve the budget as submitted, including the setting of membership dues for 1965 at $45, and to transmit same to the House of Delegates for approval on December 9, 1964. It was further VOTED to accept specific recommendations of the Budget Committee as follows:

1. That the estimated excess of income over expenditures of $7,283 remain uncommitted in the Budget at this time.
2. That the Council authorize the President and President-Elect, during their tenures of office, beginning in 1965, to attend the annual and interim meetings of the AMA House of Delegates, and their reimbursement by the Society for usual expenses incurred by their attendance.

Corporate Gift To COMPAC

Having received assurance from legal counsel that the making of a corporate gift to COMPAC for political education purposes was permissable under the Society's IRS Classification as "business league," and pursuant to the instructions of the House of Delegates (April 28, 1964), it was VOTED to make a grant to the Connecticut Medical Political Action Committee of $3,000.00 out of general funds, such grant to be used by COMPAC for political *education* purposes only.

A resolution supporting this action was received as information from the Board of Directors of the Hartford County Medical Association. It appeared to be the consensus of the Council that it would be advantageous for COMPAC to keep the Society informed as to its activities, particularly with respect to programs designed to educate physicians in matters political.

Progress Report—Ad Hoc Committee On General Practice Resolution

Waldo E. Martin, Chairman, filed a progress report for his Ad Hoc Committee which is implementing a Resolution on General Practice, adopted by the House of Delegates on April 28, 1964. It was VOTED to accept the report of the Ad Hoc Committee, and to transmit same to the House of Delegates on December 9, 1964 as the report of the Council on this subject. The April 28 action of the House called for a report to be made "at the next meeting."

Report—Subcommittee To Study And Revise The Bylaws

A report of this Subcommittee was presented by Frank K. Abbot, a member of the Subcommittee, in the absence of its chairman, James R. Cullen. It was VOTED to approve the report as presented.

Items reportable to the Council only were:

1. That Alternate AMA Delegates *not* be made members of the Council at this time.
2. That a CSMS "Judicial Council" *not* be established.
3. That the criteria for eligibility for Life Membership *not* be changed.
4. That the criteria for exemption from payment of CSMS membership dues remain as outlined in Article XII, Section 3, of the Bylaws.

Items calling for amendments to the Bylaws and transmittal by the Council to the House of Delegates for consideration and action were:

1. *Article X—Committees of the Council.* Amendments were proposed which would divide Paragraph 13 on "Delegates to State Medical Societies and Special Societies" into two separate paragraphs; i.e., "Delegates to State Medical Societies" and "Delegates to Special Societies;" and would define the qualifications and duties of such delegates.
2. *Article IV—Membership.* Amendments were proposed to add one paragraph each to Section 1—"Active Members" and Section 4—"Life Members," such paragraphs to define conditions and restrictions of membership, and especially the definition of "expulsion" and "suspension" as the terms apply to membership in CSMS.

3. *Article VII—The Council.* Amendments were proposed to Section 1, Par. 4 — "Censorship" which would outline the scope and limitations of the Council and/or its elected Committee on Preliminary Study of Censorship Questions in acting as the Board of Censors of the Society, particularly with respect to hearing appeals from disciplinary decisions of the component associations.

These three proposed amendments to the By-laws will be introduced at the meeting of the House of Delegates on December 9, 1964.

Readership Survey—Connecticut Medicine

In response to a proposal to conduct a "readership" survey of the Journal, advanced by the State Medical Journal Advertising Bureau, and to a more or less similar proposal advanced by Denis S. O'Connor, Secretary, it was VOTED to prepare and mail directly to each member of the Society a questionnaire accompanied by a covering letter urging maximum participation in the survey. The questionnaire will seek to determine from each member his reading habits with reference to the Journal, what he likes and does not like about its contents and format, and what interests him or fails to interest him about the advertisements which the Journal carries. The returns are to be reviewed and evaluated by Society's staff, as well as by the State Medical Journal Advertising Bureau.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on November 19, 1964. Detailed minutes of the meeting are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

PLACEMENT WANTED

General Surgeon—35 years of age, board eligible in general and throacic surgery, interested in either group or associate practice.

Internist—Board eligible, University background, particular interest in chest diseases. Seeks either group or associate practice in Connecticut.

Obs.-Gyn.—seeks practice with group or clinic with possible academic affiliation, Board Diplomate, 37 years of age, presently on faculty of Department of Obstetrics and Gynecology, University of Louisville School of Medicine.

General Surgeon—seeks either group or partnership practice in Southern Connecticut. Board eligible, 33 years of age, military obligation fulfilled.

PLACEMENT OPPORTUNITIES

PRACTICE FOR SALE—Long established practice with six organized rooms with living quarters, recently redecorated. Perfect for a General Practitioner.

G.P.—One or two general practitioners wanted in the Town of Windsor Locks, Conn. Small town is located near Hartford, Connecticut.

TUBERCULOSIS CONTROL PHYSICIAN needed by office of TB Control, Hospital Care and Rehabilitation of State of Connecticut. Physician will assist in carrying out public health education program; assist planning, organizing and supervising of case-finding activities. Will work with private physicians, lecture on problems of TB Control. Some clinic work. Salary ranges from $11,640 to $15,080. Full benefit coverage. Reply directly to R. C. Edson, M.D., Office of TB Control, Hospital Care and Rehabilitation, 79 Elm Street, Hartford, Connecticut.

Opportunity for Board eligible or Board qualified Pediatrician, Orthopedist and Radiologist to associate with group of specialists in newly constructed building to be completed July, 1965. New Haven hospitals close by.

WANTED: Inquiries from Ophthalmologist interested in gradually taking over office established over forty years in central Hartford, Connecticut area. Several excellent hospitals.

Office space available in Old Greenwich, Connecticut. Large waiting room available to be shared with dentist. Four Operatories plus office space.

STAFF PHYSICIAN — A fully accredited, well established comprehensive, 114 bed in-patient medical rehabilitation center has an opening for a staff physician. Internist or well experienced generalist, Connecticut license required. Liberal salary, pleasant 600 acre New England setting close to large university medical center.

ANY PERSONS INTERESTED IN THE ABOVE ARE ASKED TO COMMUNICATE WITH THE GENERAL MANAGER'S OFFICE, 160 ST. RONAN STREET, NEW HAVEN.

CABIC

A Statement Of Purpose

1. To advance the educational and general welfare of children and youth of normal or potentially normal intelligence who have learning disabilities of a perceptual, conceptual or coordinative nature or related problems.

2. Causing the establishment of proper educational facilities within the local public school systems of Southern Connecticut wherein these children may be taught.

3. To initiate and promote those programs which cannot be accomplished on a state or local level.

4. Educating parents, the professions and the community as to the problems of these children.

5. To create a climate whereby parents can pick up the strength to recognize their own fears and problems and join in a group effort to help their children.

6. To work with and encourage the professions and existing institutions to act more effectively.

7. To compile and collect the findings and publications of professional workers engaged in programs of research concerning these children and to make these available to parents, professionals, schools, etc.

8. To assemble an advisory board consisting of leaders from professions and occupations concerned with any phase of the problems of these children.

9. To cooperate with other similar local associations and with the national organization to better implement the above.

10. This association is non-profit, non-partisan, non-political and shall not endorse a commercial product.

Connecticut Association For
Brain-Injured Children
P. O. Box 463
Norwalk, Connecticut

1965 MEETINGS

March 18—181st Annual Meeting of the New Haven County Medical Association to be held at the Waverly Inn, Cheshire, Connecticut beginning at 2:30 p.m.

April 27-29—Connecticut State Medical Society Annual Meeting to be held at Statler-Hilton Hotel, Hartford, Connecticut.

September 24—40th Clinical Congress to be held in Mary S. Harkness Auditorium at the Yale University School of Medicine, New Haven. The program will be devoted to "Advances in the Treatment of Infections" and "Advances in the Treatment of Shock."

AROUND THE STATE

New Haven County

The November 19th meeting of the Board of Governors of the New Haven County Medical Association was held at the Colonial House, Hamden, with Dr. Jack Galen presiding.

Our Councilor, Dr. Henry Caplan, briefed the Board on the latest meeting of the Council. This included the recommendation of the Trifari Committee on Regional Hospital planning that those charged with establishing new hospital facilities co-operate and participate for the planning of and providing for needed hospital coverage with groups already established in their area. Dr. Waldo Martin, President of the New Haven County Hospital Association told the meeting his group, which is occupied with this problem, has already made such advances and reported progress in their efforts towards liaison.

Dr. Max Caplan, Chairman of the Speakers' Bureau Committee announced that TV strips which were made by our members should soon be viewed over the facilities of WNHC-TV.

The sum of $40 was voted to pay for a full page advertisement in the program of the New Haven County Women's Medical Auxiliary being prepared for their annual spring dinner and dance.

A letter was read by Dr. H. A. Levin, Clerk, from Dr. Blasingame, Executive Secretary of the A.M.A. in which he expressed his appreciation for our cooperation in combatting Medicare Legislation in the final days of the last Congress.

We were joined at dinner by a representative from Synanon, Inc. of Greens Farms, Connecticut, who told of their work in helping those with addictions of various kinds, especially to drugs.

It was voted to send Synanon, Inc. a check for $50 to aid in their great work.

H. A. Levin, m.d., *Clerk.*

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New York City

Doctor's Office

Anthony H. Axiotis, M.D., announces the opening of an office for the practice of psychiatry at 96 High Street, Portland.

Herbert A. Kaufmann, M.D., announces his association with Harry C. Knight, M.D., in the practice of urology at 33 Pleasant Street, Middletown.

Joseph F. Krivda, M.D., announces the opening of an office for the practice of family medicine at 17 Governor Street, Ridgefield.

Thomas P. Kugelman, M.D., announces the opening of an office for the practice of diseases of the skin at 85 Jefferson Street, Hartford.

Murat A. Merdinolu, M.D., announces the opening of an office for the practice of obstetrics and gynecology at 166 East Avenue, Norwalk.

Letter To The Editor

To The Editor:

Dr. William F. Eckhardt, Jr.'s article in the November, 1964 issue of Connecticut Medicine, merits acknowledgement. He has summarized the problems of the PBI and BEI determinations and more importantly has emphasized the need for objective testing before a patient is started on thyroid medication. His article is certainly timely. Could he possibly set a trend for other articles concerning the use and abuse of medications and/or diagnostic tests?

Sincerely yours,

George L. Cohn, M.D.
Yale University School of Medicine
Asst. Professor of Medicine
Department of Internal Medicine

173rd (1965) Annual Meeting

CONNECTICUT STATE MEDICAL SOCIETY

APRIL 27, 28, 29, 1965

Statler-Hilton Hotel,
Hartford

WOMAN'S AUXILIARY

President
Mrs. Charles M. Krinsky, New London

President-Elect
Mrs. William R. Richards, New Haven

First Vice-President
Mrs. James F. Jones, Danielson

Second Vice-President
Mrs. David O'Keefe, Hartford

Recording Secretary
Mrs. Harry Levine, Fairfield

Corresponding Secretary
Mrs. Hilliard Spitz, New London

Treasurer
Mrs. Stephen A. Hulme, West Hartford

"Join Hands—Close The Gap"

This is the 1964 "watchword" of the Membership Committee of the Auxiliary to the American Medical Association and has been adopted by most of the County Auxiliaries. The committee offers for consideration that "bold step"—a goal of 100 per cent, through joint husband-wife membership whereby the doctor includes with his dues to the State Medical Society, the dues for his wife's membership to the Auxiliary.

The objectives of the Auxiliary include assisting the Connecticut State Medical Society in its program for the advancement of medicine and public health, as well as cultivating friendly relations and promoting understanding among physician's families and with the lay public.

The County Auxiliaries have committees on: A.M.A.-E.R.F. (American Medical Association Educational and Research Foundation), Art, Community Service, Disaster Preparedness, Health Careers, Legislation, International Health Activities, Mental Health, Safety, and School Health, as well as the functioning committees of any organization such as Finance, Editorial Staff, Historian, Hospitality, Membership, Parliamentarian, Program, and Publicity.

Among the various community activities included are: publicizing of health and safety programs; making available school health career programs in the high schools to familiarize the students with the various health careers open to them and offering scholarships to help finance the necessary training; providing volunteer assistants at the Mental and Veteran hospitals in the state; providing regular recreational activities such as coffee hours, companion therapy, birthday cakes and parties in these hospitals. More community projects need to be adopted, but also require more members who can give time and effort to operate them.

Auxiliaries throughout the forty-eight states have contributed many hours to the Legislative efforts of the Medical Societies during the past two years.

Doctors, we urge you to consider the husband-wife membership plan! In the meantime, while such a plan is under consideration, please encourage your wife to join her county auxiliary—her membership dues will go far toward carrying out the Auxiliary goals and her talents and interest will be of immeasurable value.

Listed below are the names of the county presidents who will be happy to answer any inquiries about membership:

Fairfield County — Mrs. Ralph Tella, 55 Glenbrook Road, Stamford

Hartford County—Mrs. Forrest D. Gibson, White Oak Road, Farmington

Litchfield County—Mrs. Joseph Czarsty, 18 Hillside Avenue, Oakville

Middlesex County — Mrs. Americo Longo, Main Street, Portland

New Haven County — Mrs. Arnold Baskin, 103 Ridgewood Avenue, Hamden

New London County—Mrs. Bernard Beatman, 449 Montauk Avenue, New London

Windham County—Mrs. George Carter, Windham Center

Semi-Annual Meeting

The semi-annual meeting of the Woman's Auxiliary to the Connecticut State Medical Society was held at the Hotel America in Hartford on November 16, 1964.

During the morning meeting those present listened to Radio Station WTIC which broadcast an interview with the president-elect of the Auxiliary to the A.M.A., Mrs. Richard Sutter of St. Louis, Missouri, by Jean Colbert. Mrs. Sutter adroitly handled the various questions put to her about the Auxiliary, the A.M.A. and her own personal life as a doctor's wife.

Reports by the county presidents indicated an increase in membership, additions to the scholarship funds of various counties through fund-raising activities such as dinner dances, rummage sales, and a play, as well as participation in teas and coffee hours at the State Mental Hospitals and Veterans' Facilities.

During the luncheon which followed a social hour, members of the Board modelled furs and hats. Later a group from the New London County Auxiliary presented a play, "To Temper the Wind," a dramatization of the Homemaker Service in action.

Dr. Ralph L. Gilman, president of the C.S.M.S. brought greetings from the society and complimented the women on the splendid work being accomplished. He recalled that he was an advisor from the Medical Society at the time the Auxiliary was formed, twenty years ago.

Guest speaker was Mrs. Sutter who gave a serious and very informative talk on the valuable work done by Auxiliary members. She urged continued and increased activity in presenting the true picture of medicine.

BOOKS RECEIVED

Books received for review are acknowledged in this department and such acknowledgement must be regarded as a sufficient return for the courtesy of the sender. Selection will be made for review in the interests of our readers and as space permits.

Multiple Impact Therapy With Families. Robert MacGregor, Ph.D., Agnes M. Ritchie, M.S.W., Alberto C. Serrano, M.D. and Franklin P. Schuster, Jr., M.D. The Blakiston Division, McGraw-Hill Book Co., New York, 310 pp. $9.95.

Pediatric Procedures. Walter T. Hughes, Jr., M.D., Assistant Professor of Pediatrics, University of Louisville School of Medicine, Louisville, Kentucky. W. B. Saunders Co., Philadelphia, 1964, 208 pp., illustrated. $7.50.

Common Bacterial Infections. Pathophysiology and Clinical Management. By Edwin J. Pulaski, Col., MC, U.S. Army, W. B. Saunders Co., Philadelphia and London, 1964, 301 pp., illustrated, $8.50.

Scintillation Scanning In Clinical Medicine. Based on a Symposium Sponsored by the Dept. of Radiology, Bowman Gray School of Medicine, By James L. Quinn, III, M.D., W. B. Saunders Co., Philadelphia and London, 1964, 278 pp., illustrated, $11.50.

Surgery Of The Breast. By Louis H. Jorstad, M.D. with collaboration of Meredith J. Payne, M.D., The C. V. Mosby Co., St. Louis, 1964, 212 pp., with 37 line drawings and 33 photographs, including 5 in color, $15.00.

The Visual Fields. A Textbook and Atlas of Clinical Perimetry. 2nd Edition. By David O. Harrington, A.B., M.D., F.A.C.S., The C. V. Mosby Co., St. Louis 1964, 375 pp. with 318 figures and 9 color plates, $16.00.

Experience In Renal Transplanatation. By Thomas E. Starzl, Ph.D., M.D., W. B. Saunders Co., Philadelphia and London, 1964, 383 pp., Illustrated. $17.00.

Respiratory Function In Disease. An Introduction to the Integrated Study of the Lung. Authors: David V. Bates, M.D and Ronald V. Christie, M.D., W. B. Saunders Co., Philadelphia and London, 1964, 566 pp., illustrated. $15.50.

Autoregulation Of Blood Flow. American Heart Association Monograph, Number Eight. Edited by Paul C. Johnson, Ph.D. Proceedings of an International Symposium held June 10, 11, 12, 1963 in Indianapolis. American Heart Association, Inc., New York, 1964, 291 pp. $3.00.

Blood Program In World War II. Prepared and published under the direction of Lt. Gen. Leonard D. Heaton, Surgeon General, U.S. Army; Editor in Chief, Col. John B. Coates, Jr., MC, USA; Assoc. Editor, Elizabeth M. McFetridge, M.A. Office of the Surgeon General, Dept. of the Army, Washington, D.C., 1964, 922 pp. with 195 illustrations, 42 tables 14 charts, 7 maps. 8.00.

Polypoid Lesions Of The Gastrointestinal Tract. Claude E Welch, M.D., Vol. II in the Series Major Problems In Clinical Surgery. J. Englebert Dunphy, M.D., Consulting Editor. W B. Saunders Co., Philadelphia and London, 1964, 148 pp. illustrated. $7.50.

Current Practice In Orthopaedic Surgery. Vol. 2. John P Adams, B.S., M.D., F.A.C.S., Editor. The C. V. Mosby Co. St. Louis, 1964. 219 pp., illustrated. $13.50.

Rehabilitation Medicine. 2nd Edition. A Textbook on Physical Medicine and Rehabilitation. By Howard A. Rusk M.D. and thirty-six collaborators; with the editorial assistance of Eugene J. Taylor, A.M. The C. V. Mosby Co. St. Louis, 1964. 644 pp., with 210 figures and 26 charts. $15.50

Industrial And Traumatic Ophthalmology. Symposium of the New Orleans Academy of Ophthalmology. By Arthur H Keeney, M.D., Hedwig S. Kuhn, M.D., Roderick MacDonald Jr., M.D., Frank W. Newell, M.D., Joseph F. Novak, M.D. Ralph W. Ryan, M.D., and Lorenz E. Zimmerman M.D. The C. V. Mosby Co., St. Louis, 1964. 308 pp., Illustrated $14.50.

OBITUARY

Samuel E. Fabricant, M.D.

1896 - 1964

Dr. Samuel E. Fabricant, a member and former resident of our Society, passed away after a very rief illness October 22, 1964 at the age of 67. He vas born in Waterbury, October 30, 1896, graduated Webster Grammar School, Crosby High School, New York University, and Jefferson Medical School in Philadelphia, Pennsylvania. After an nternship and residency be began the practice of medicine in Waterbury in 1922 and practiced there until his death.

He was a true example of the beloved "Family Doctor." It is undoubtedly of one like Dr. Fabricant that Robert Louis Stevenson wrote: "There are men and classes of men that stand above the common herd: the soldier, the sailor, the artist, the clergyman, not infrequently; the physician almost as a rule. He is the flower (such as it is) of our civilization." Herodetus, the Greek historian, also truly described those like him when he wrote: "Neither snow, nor rain, nor heat, nor gloom of night stays these couriers from the swift completion of their appointed tasks."

No patient was ever turned away whether rich or poor, and no matter what the hour, day or night. He kept abreast of medical knowledge and applied it well to his large practice. Like the true family doctor, he was not the first to try the new nor the last to drop the old, and availed himself of the specialties as indicated.

Besides being a member of the Waterbury Medical Society, New Haven County, Connecticut State Medical Society and the American Medical Association, he was on the staff of both St. Mary's and Waterbury Hospitals. Not only did the interns and residents profit from his medical knowledge, but even his fellow doctors.

He was a modest, self effacing gentleman, mild, never angry, and never heard to criticize his fellow man. There was always a smile for everyone. His modesty permitted but very few to know of his musical talent; he could very easily have made his mark in the world as a concert pianist. His generosity to many public causes extended over the years.

He is survived by a sister, several brothers, nieces, and nephews, one of whom, Dr. Henry J. Cutler, is now practicing in Waterbury. He will be missed not only by his family but also by his many friends.

Samuel M. Atkins, M.D.

In Memoriam

Conlon, William L. – Manchester; Jefferson Medical College, 1936. Dr. Conlon was a general practitioner in the Manchester area for more than twenty years. During World War II, he helped evacuate the wounded from the Anzio beach-head and was one of the first Navy doctors to reach Rome. Dr. Conlon served in the Mediterranean, Italy, and Southern France and retired as a Lieutenant Commander. He was chief of radiology at Manchester Memorial Hospital. Dr. Conlon was a member of the American Medical Association, the Radiology Society of North America, the Connecticut State Medical Society, the Hartford County Medical Association, and the Manchester Medical Society. Dr. Conlon died November 16, at the age of 54.

Waterman, Chester—Portland; McGill University, 1905. Dr. Waterman was superintendent of the Connecticut Valley Hospital for one year and assistant superintendent for eleven years. He also served as superintendent of the Norwich State Hospital for six years. He was a past president of the New England Society of Psychiatrists and the Middletown University Club. Dr. Waterman was on the consulting staff of the Middlesex Memorial Hospital. He was a member of the American Medical Association, the Connecticut State Medical Society, and the Middlesex County Medical Association. He was active in civic affairs and had been president of the Family Service Association. Dr. Waterman died November 29, at the age of 83.

Special Notices

YALE MEDICAL SOCIETY

Tuesday, February 9, 1965 — 5:00 P.M.

"The Interferons: Cellular Mediators of Viral Infection"
Robert R. Wagner, M.D.
Professor of Microbiology
The Johns Hopkins University School of Medicine
Mary S. Harkness Memorial Auditorium
Yale University School of Medicine
333 Cedar Street, New Haven
This lecture is open to all who may be interested.

1965 NATIONAL MEDICOLEGAL SYMPOSIUM

March 11-13, 1965

The American Medical Association and the American Bar Association have joined forces to sponsor the 1965 National Medicolegal Symposium on March 11-13 at the Dunes Hotel in Las Vegas.

The meeting will provide the physician with an excellent educational opportunity on an important part of his professional life. Some 1,200 physicians and attorneys are expected to attend.

The biennial Medicolegal Symposium, sponsored solely by the AMA in the past, was considered to be the outstanding meeting of its kind. Participation by the ABA promises an even more informative program.

Joint AMA-ABA sponsorship of the 1965 National Medicolegal Symposium was agreed upon by the AMA-ABA Liaison Committee.

Thomas Boddell, chairman of the ABA Liaison Committee, stated, "The AMA is to be congratulated on its individual sponsorship of this very worthwhile meeting in the past, and the ABA appreciates the opportunity to co-sponsor such a program."

According to Robert B. Throckmorton, AMA general Counsel, topics to be covered include the common goals and ideals of law and medicine, the medical witness, current litigation, and tax problems. Trial vignettes will be used to dramatize courtroom situations.

The meeting will start at 2 p.m., Thursday, March 11, and conclude at noon, Saturday, March 13.

Registration fee for the symposium will be $25.00, which will cover the cost of a luncheon on Friday, a reception and a copy of the proceedings.

Advance registration cards may be obtained by writing to Mr. Robert B. Throckmorton, general counsel, American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610.

Contact: Bob Root, 527-1500, UP8-4074.

AMERICAN CANCER SEMINAR

March 17-20, 1965

The Arizona Cancer Seminar for doctors is being resumed after an interval of two years. It will be held at the Pioneer Hotel in Tucson, Arizona, March 17 to 20, 1965.

There will be a $10 registration fee for all practising physicians. Additional information may be obtained by writing to The Arizona Division of the American Cancer Society, 4700 N. 12th Street, Phoenix, Arizona.

YALE UNIVERSITY SCHOOL OF MEDICINE

will present a special postgraduate course

PATHOLOGY OF THE LUNG

March 15-20, 1965

Under the direction of Averill A. Liebow, M.D.

This intensive postgraduate course has been planned for physicians and pathologists who have a special interest in pathology of pulmonary disease. Some experience in interpretation of microscopic tissue sections is a prerequisite.

The six-day course will stress newer knowledge of pulmonary disease including recently discovered and less commonly encountered entities. It will consist largely of over-the-microscope instruction using material from the teaching and consultation files of the Department of Pathology. Instruction will also be given in injection and macrosection techniques.

Sessions will be held daily from 9:00 A.M. to 5:00 P.M. Monday, March 15, through Saturday, March 20, 1965, in the Department of Pathology at Yale University School of Medicine, New Haven, Connecticut.

Because of the nature of the instruction, the number of participants must be limited to 15. Inquiries regarding tuition and enrollment should be sent to the Office of Postgraduate Medical Education, Yale University School of Medicine, 333 Cedar Street, New Haven, Connecticut (06510) prior to February 1, 1965. Applicants will be notified by February 15 regarding acceptance.

INSTITUTE FOR CARDIOPULMONARY DISEASES

September 15, 1965-June 15, 1966

A nine-month tutorial program in Cardiology, September 15, 1965 to June 15, 1966, will be offered by the Institute for CardioPulmonary Diseases, Scripps Clinic and Research Foundation, La Jolla, California. This will be an intensive program covering the field of cardiovascular diseases and is especially designed for the physician in private practice who wants an academic year of organized instruction with freedom from direct patient responsibility. For details, write: E. Grey Dimond, M.D., Institute for CardioPulmonary Diseases, Scripps Clinic and Research Foundation, La Jolla, California.

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NEW BOOKS IN REVIEW

DISEASES OF METABOLISM, DETAILED METHODS OR DIAGNOSIS AND TREATMENT. Fifth edition, Edited by Garfield G. Duncan, M.D., W. B. Saunders Co., Philadelphia and London, 1964. 1551 pp., Illustrated. $28.00.

Reviewed by: LOUIS H. NAHUM

Dr. Charles H. Best, a personal friend of the editor, writes in the foreword, "this book presents the most modern methods of diagnosis and treatment and is the product of the painstaking thought and care of many scientists." With this authoritative stamp of approval, the average reader safely approaches the book with confidence of its excellence. A quick glance over the names of the thiry-two contributors at once solidifies our confidence in the value of the book. All are renowned investigators and clinicians who have greatly contributed to biochemistry, endocrinology and genetics. Most, as clinicians, have had the opportunity to derive basic principles from the study of the human subject and in turn to offer the knowledge in the care and relief of people who are ill with metabolic disorders.

To be an effective clinician we must have a broad knowledge of disorders of metabolism and the pathological states they engender and one thing more, a benevolent understanding of the patient as an individual. It is a matter of satisfaction to the reader to find that this book carries him along these three paths. Certainly our knowledge of clinical medicine cannot contribute much to the well being of the patient if we are unaware or misunderstand the pathological aberrations of metabolism. For example, severe restriction in sodium intake is beneficial in most cases of essential hypertension, but we must also know its pitfalls for in the dehydrated azotemic patient such a restriction may prove fatal.

In this 5th Edition, seven new chapters have been added; one on inborn errors of metabolism; one on the parathyroid gland; the metabolic considerations in the functions and disorders of the digestive tract; the metabolic considerations in functions and disorders of the nervous system; nutritional and metabolic aspects of disorders of the blood; metabolic considerations in disorders of the circulatory system; metabolic considerations in the function and disorders of the respiratory tract. It is understandable that there should be some overlapping in chapters written by different authors. For example, how can this be avoided when a hematologist, a gastroenterologist and a clinician discuss the problem of hemochromatosis. Or how can bone metabolism be discussed other than by a biochemist and a clinician. Repetitions are bound to arise when subjects are viewed in the perspective of different interests. Protein metabolism will be seen one way by a physiologist and in another way as a genetically determined disease by a geneticist. Sometimes repetitions can be considered as a method to insure retention. For example, newly detected diabetes in an obese patient is repeatedly referred to as "a mild form of diabetes" and repeatedly emphasized that oral therapy may supplement but should never be a substitute for a reduction in weight of these subjects.

There is no doubt that this book brings together explanations of the delicate mechanisms of regulation in endocrinology and metabolism that has already been purchased at a vast cost of human time and effort. The authorities who have contributed to the unravelling of the inbuilt puzzles speak to us out of these pages. The book's philosophy is that effective practice of internal medicine is no longer possible without knowledge of chemical events and cellular phenomena. The laboratory bench and the patient's bedside are but different symbols of "the unitary intellect of medicine." Student, physician, specialist, for all, this book can be a beacon light in the modern practice of medicine.

PREVENTIVE MEDICINE IN WORLD WAR II— VOLUME VII — COMMUNICABLE DISEASES. Arthropod Borne Diseases Other Than Malaria. Editor-in-Chief John Boyd Coates, Jr., M.C., U.S.A. Editor for Preventive Medicine, Ebbe Curtis, Ph.D., M.D. Superintendnt of Documents, U. S. Government Printing Office, Washington, D. C., 20402. 397 pp. $4.25.

Reviewed by: DENIS S. O'CONNOR

This may well be said to be the story of the diseases which did not occur and while the statement would not be literally true, in the light of what might have been expected, it is an astonishing record of prevention of diseases, which heretofore in war, have been not only the cause of numerous deaths but of serious danger to the prosecution of war.

As one reads of the work of the Army's Preventive Medical Service, the Army Epidemiological Board, the American Typhus Commission and the Public Health Service to mention only the main organizations engaged in keeping the virus and rickettsial diseases away from our forces, one almost forgets the relationship of the diseases to the war effort in the absorbing story of the prevention of these dangerous diseases as a public health measure.

Because most of us are aware of what the typhus diseases have connoted in previous wars our interest in this group of diseases is greater. Sandfly fever and Dengue as potential factors in personnel ineffectiveness were studied exhaustively and practical measures devised for effective control in future warfare seems assured.

The advanced studies of the typhus diseases in civilian areas throughout the world by the U.S.A. Typhus Commission where its presence was recognized, was instrumental in the accumulation of the knowledge which enabled the Army's Preventive Medicine Section to devise measures for the prevention of the disease among the troops. The development of D.D.T. and means of its production was most fortunate because of its effectivness against the lice, fleas and ticks, which were the vectors of these diseases.

While we may think of many of the diseases covered in this book as diseases foreign to our country we should be ever mindful of the proximity of all countries on the face of the earth as the result of swift transportation.

Any laxity in our public health control could bring us face to face with some, if not all, the arthropodborne diseases covered in this volume. A casual reading of this book by every medical man would be helpful. A study of this material would broaden his knowledge in preparation for foreign medical service which is today becoming more and more a part of the service-minded practitioner.

FOETAL AND NEONATAL PATHOLOGY. Second Edition, by J. Edgar Morrison, M.D., D.Sc., Butterworth, Inc., Washington, D. C., 1963. 552 pp., illustrated. $19.50.

Reviewed by: ROY N. BARNETT

This is the completely rewritten second edition of a work which first appeared in 1952. The author is an Irish pathologist who serves as Consultant in Histo-Pathology at the Belfast City Hospital.

The book is organized into 3 major sections, namely Disturbances of Pre-Natal Life, Adaptation to Extra-Uterine Existence and Infections in Fetal and Neonatal Life. In each of these sections the normal developmental mechanisms are discussed in some detail followed by a consideration of disturbances of these mechanisms. In many ways the discussion of the physiology and normal development are more comprehensive than those of the disease states.

The author has produced a volume which is monumental in scope, including a very extensive bibliography and text mention of many points of view. In a sense it is largely a "Review of Reviews" with little emphasis on the author's own conclusions or his evaluation of the material. If you seek a good starting point to search the literature in a specific field, this is a most useful book. On the other hand by itself it does not go into great detail as to the clinical features or pathology of most individual disorders and would not suffice the pathologist for diagnosis nor the clinician for anatomic knowledge of many diseases of infancy.

Any American reader must inevitably compare this with Edith Potter's classic Pathology of the Fetus and Newborne, the standard work in this country. Potter's work is much more individual, authoritative and arbitrary, and gives her specific point of view about most subjects; for the usual questions posed by general pathologists or practicing pediatricians she provides straight forward answers. My personal preference is for the Potter work. Dr. Morison's style is not as lucid as that of most English authors and his efforts to contract sentences and save words frequently result in ungrammatical or incomprehensible statements. The photographs, tables and diagrams make their points well although the technical quality of some of them is mediocre.

In summary then this work does illustrate clearly how our advancing knowledge in this vital field often presents us with more questions than answers. The questions are well posed, the answers expounded less satisfactorily.

Ciba Foundation Symposium: CELLULAR INJURY. Editors: A. V. S. deReuck and Julie Knight. Little, Brown and Co., Boston, 1964. 403 pp., 81 illustrations. $12.00.

ANIMAL BEHAVIOR AND DRUG ACTION. Editors: Hannah Steinberg, Ph.D. for the Co-ordinating Committee and A. V. S. deReuck and Julie Knight for the Ciba Foundation. Little, Brown and Co., Boston, 1964. 491 pp., 103 Illustrations. $13.00.

Reviewed by: IRA S. GOLDENBERG

Of many unique international educational foundations, some deal with small aspects of large problems while others are devoted to much broader spectra. The Ciba Foundation is one of the latter, covering the whole field of the biological sciences, and owes its inception to the generosity of Ciba Limited which has headquarters in Switzerland. This remarkable undertaking offers scientists from around the world an opportunity to participate in conferences, the proceedings of which are published for general distribution. In addition to formal conferences, the Foundation fosters informal discussions among research workers of different disciplines and from many nations.

Two symposia recently published by the Ciba Foundation are of interest to the physician. The first deals with cellular injury and correlates closely with a previous one concerning lysosomes. The group of experts who gathered to discuss cellular injury present this topic with clarity regarding the various theories of cellular damage by exogenous, endogenous and humoral agents. It is probably the most complete group of papers assembled to date on this topic and even for the neophyte, this volume is interesting and illuminating. Practical applications for the physician are probably limited, but perusal of these pages will impress him with the debt we owe to the basic biologists for their investigations of the life process itself.

The second symposium relates to problems of psychopharmacological investigation in animals. The first portion surveys the whole field in a broad way, but attention is focused on an analysis of ways in which the drugs act at the strictly behavioristic level and on the neurophysiological mechanisms involved. A great mass of material is presented analyzing the interaction between drugs under experimental circumstances which result in the behaviorism observed. The role of behavior tests in animals for screening new drugs prior to clinical use in man is also evaluated. The second portion of the volume is devoted to informal discussion by an invited group of investigators who explore many of the ideas introduced earlier in greater depth. The problem of legitimate extrapolation of effects in animals to effects in man is examined in particular.

A fantastic amount of research is being conducted in psychopharmacology and certainly the information presented in this symposium merely scratches the surface. No final conclusions can be drawn from this material but its content does indicate how our understanding of the mode of action of drugs which act centrally is advancing and how study of behavior plays a crucial part in this understanding. This volume is of particular interest to the psychiatrist and pharmacologist but it also applies to the practice of any other physician. Perusal of these interesting pages may be counted an evening well spent.

TEXTBOOK OF PEDIATRICS. 8th Edition. Edited by Waldo E. Nelson, M.D., D.Sc., with the collaboration of eighty-five contributors. W. B. Saunders Company, Philadelphia and London, 1964, 1636 pp., illustrated. $18.00.

Reviewed by: LOUIS H. NAHUM

This excellent textbook considers the child in its entirety and in the introductory chapters we find beautifully covered the over-all picture of the field of pediatrics by Professor Nelson, as well as the physical, mental, and emotional growth and development of the child including psychologic disorders, disorders of language. There follows chapters on general factors in the care of sick children; prenatal disturbances and also those of the new born infant; various infectious diseases; as well as diseases of all organ systems; a section on the physician and the child with a handicap; poisons; allergic disorders; unclassified diseases; neoplasmas; radiation injury and an appendix on normal laboratory values.

As one goes over the different editions, one finds that the basic goals of pediatrics have not changed, but because of growth in physiology and therapeutics, there have occurred significant changes in pediatric practice. One phase especially has been developed, besides physiology and therapeutics, is the antenatal origin of disease, an emphasis which is found in several sections: Prenatal factors in disease, inborn errors of metabolism, the new-born infant and also throughout the rest of the book.

Any textbook should meet the needs of undergraduate medical students, pediatricians and the general practitioner. With medical science advancing on all fronts the general practitioner must continue to grow in knowledge and perhaps in future editions there might be added after each chapter Programmed Learning sheets which will bring out the basic elements as well as the synthesized knowledge all of which is present in this volume.

The editor has accomplished his task superbly. He has achieved continuity of thought without undue repetition, brevity without loss of explanation and a similarity of style throughout the book. There is undoubtedly a reasonable synthesis of current knowledge expertly evaluated and interpreted It belongs on every doctor's desk.

As usual Saunders has achieved an excellent job in printing and format.

GASTROENTEROLOGY, Vol. II, by Henry L. Bockus, M.D., W. B. Saunders Co., Philadelphia and London, 1964. 1241 pp. $28.00.

Reviewed by: MARVIN I. FOX

With Volume II, Bockus and his associates continue their revision of one of the most comprehensive texts in gastroenterology. This volume includes, a section on the small intestine, absorption and nutrition, the colon, peritoneum, mesentery and omentum. Advancement in knowledge has been so extensive in the past twenty years since the first edition that it is virtually completely rewritten.

The text is primarily clinical in orientation, but there is adequate reference to pertinent experimental material. Each section is introduced with complete reviews of the anatomy, embryology and physiology of the organ in question.

There is a very complete discussion of the small intestine, an area often inadequately covered in lesser gastroenterologic texts. Peroral biopsy techniques including the Shiner Tube and Crosby Capsule are discussed. The value of electron microscopy in evaluating these specimens is also reviewed. The various pathological entities affecting the small bowel are reviewed. The chapter on regional enteritis is particularly distinguished. The section on treatment reflects the author's opinion. He does make an effort to review the thoughts of others. Malabsorption an area of much recent interest, is comprehensively reviewed. There is a chapter on protein losing gastroenteropathy, a comparatively newly recognized entity. Laboratory techniques of value in diagnosing these latter conditions are discussed. The importance of the gastrointestinal tract in iron absorption and other aspects of hematopoesis is emphasized in the chapter entitled, "Anemia in Digestive Tract Disorders." An often neglected area, comprising a large percentage of gastroenterologic and general medical practice is that of functional disorders of the colon. These problems are well reviewed in this text. The section on therapy here again reflects the opinion of the author. A comprehensive review of ulcerative colitis is presented. In many instances the authors express their opinions about controversial areas i.e. backwash ileitis, enterocolitis, indications for surgical treatment. Enteric parasitic diseases with the exception of amebiasis are not individually discussed. The text includes chapters on peritoneoscopy and lymphangiography.

Throughout this volume as in Volume I the normal and pathological radiographic features of each organ is presented. The text is encylopedic in scope and will continue to serve as a useful reference for those interested in gastroenterologic topics.

SYMPTOMOLOGY AND THERAPY OF TOXICOLOGICAL EMERGENCIES. By William B. Deichmann, Ph.D. and Horace Gerarde, Ph.D., Academic Press, Inc., New York and London, 1964. 551 pp. $18.00.

Reviewed by: LOUIS H. NAHUM

This handbook was written especially for the physician who needs toxicological information on a drug or chemical. It quickly reviews the major side effects of drugs as well as treatment of an intoxication. Any one who needs guidance for treatment of a case of poisoning can receive it in this volume at a moments notice. It would be invaluable in the medical bag of the practicing physician both in and out of hospitals.

The drugs and chemicals are listed in alphabetical order for quick reference and there is a complete index covering all materials including the tables. Many references are given to original papers. It is obvious that the authors have carefully reviewed current literature published in this country and abroad.

This volume should be of particular value to those industries and operations which have an active industrial hygiene program. It would also be helpful to teachers of chemistry, biochemistry, pharmacology, toxicology and radiation medicine who instruct students or supervise the work of technicians.

PSYCHIATRY FOR THE MEDICAL PRACTITIONER

NEW ORLEANS, LOUISIANA — MARCH 4-6, 1965

Sponsored by the DIVISION OF NEUROLOGY AND PSYCHIATRY OF TOURO INFIRMARY under a National Institute of Mental Health Grant.

GUEST LECTURERS INCLUDE:

Jack Ewalt, M.D., Prof. of Psychiatry, Harvard Med. School, Past Pres. of American Psychiatric Association, Boston, Mass.

John Lambert, M.D., Medical Director, Four Winds Hospital, Katonah, N. Y.

Zigmond Lebensohn, M.D., Chief, Dept. of Psychiatry, Sibley Memorial Hospital, Washington, D.C.

William Sheeley, M.D., Director of Psychiatry & Medical Practice Project of the A.P.A., Washington, D.C.

Philip Solomon, M.D., Chairman, A.P.A., Committee on Medical Practice, Boston, Mass.

Course will be given at Jung Hotel, 1500 Canal Street, New Orleans, La. Hotel reservations to be made directly with the Jung or hotel of your choice. Registrants who would like to enjoy Mardi Gras (March 2) are urged to make reservations **immediately.**

Guest speaker for the luncheon on March 4 will be George Burch, M.D., Henderson Professor and Chairman, Dept. of Medicine, Tulane Medical School. Subject: "Emotions and Cardiovascular Disease." Cost of luncheon included in registration fee. At the end of Friday's session, there will be a dutch treat two-hour cocktail party with George Lewis and his band from Preservation Hall entertaining.

AMONG TOPICS TO BE DISCUSSED:

"Detection of Incipient Psychiatric Disorders During a General Medical Examination"

"Medical Practitioners and Supportive Handling of Schizophrenia"

"Adolescents—Disturbed and Disturbing"

"The Physician and His Reaction to the 'Crock'"

"Newer Thoughts About the Therapy of Alcoholism"

"Medical Conditions with Psychiatric Manifestations"

"Recognition and Treatment of Depressive Reactions by Medical Practitioners"

"Treatment of Emotional States by the Medical Practitioner"

GENE L. USDIN, M.D., Chief
Division of Neurology & Psychiatry
Touro Infirmary
3516 Prytania Street
New Orleans, La. 70115

Enclosed is my registration fee of $20 for the "Psychiatry for the Medical Practitioner" course to be given March 4-6, 1965, at the Jung Hotel. (Checks should be made payable to Touro Infirmary.)

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Weak Staph Can Block Virulent Strains

Nasal inoculations of weak Staphylococcus aureus can prevent the subsequent acquisition of virulent infection-producing strains of this bacterium, a study among volunteers at the Federal Penitentiary in Atlanta showed recently.

The findings indicate that this protective interference, previously observed in studies among newborns, might be used to prevent staph infections in households and hospitals, according to a report in the current American Journal of Diseases of Children, published by the American American Medical Association.

Virulent strains of staph are found among other normal bacteria carried nasally by certain persons who represent a potential hazard to their environment, their contacts and to themselves, it was pointed out. At present, there is no known method which permanently eradicates virulent staph strains from all persistent carriers.

There were 122 persistent staph carriers and 212 persistent noncarriers included in the study reported by Drs. Marvin Boris, New York City, Thomas F. Sellers, Jr., Atlanta, Heinz F. Eichenwald, Dallas, John C. Ribble, New York City, and Henry R. Shinefield, New York City.

Some carriers were given antibiotics which temporarily removed nasal bacteria, then inoculated with the weak staph strain, and finally challenged with the virulent strain, while other groups of carriers and non-carriers were used for comparison purposes.

The ability to colonize persistent non-carriers with the weak strain was significantly less than the ability to colonize carriers pretreated successfully with antibiotics, the researchers said.

Antibiotic therapy as employed in this study only resulted in a transient suppression of S aureus, according to the report. When drug therapy was not immediately followed by inoculation with the weak staph strain, the authors commented, the original S aureus strain reappeared in most subjects. Conversely, they added, the original strain was recovered only rarely when there was successful implantation of the weak strain following the antibiotic regimen.

The study provides "direct evidence" that nasal colonization of a weak staph strain interferes with the subsequent colonization of an infection-causing strain, the authors concluded.

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Contraindications
Hypersensitivity, and most cases of severe renal or hepatic disease.
Precautions
Reduce dosage of concomitant antihypertensive agents by at least one-half. Discontinue if the BUN rises or liver dysfunction is aggravated. Electrolyte imbalance and potassium depletion may occur; take special care in cirrhosis or severe ischemic heart disease, and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended.
Side Effects
Constipation, dizziness, dysuria, headache, hyperglycemia, hyperuricemia, leukopenia, muscle cramps, nausea, purpura, thrombocytopenia, transient myopia, urticaria, vomiting and weakness.
Average Dosage
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Availability
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For full details, see the complete prescribing information.

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MEDICAL NEWS

Search For Viruses In Human Leukemia Highlights Year's Medical News

Year In Review

Medical scientists found some strong evidence for the viral theory of human leukemia in 1964, stirring hopes for early proof of a virus-leukemia relationship and providing some of the year's top medical news stories.

A review of medical headlines in 1964 shows that other virus hunters made news, too. Investigators of viral hepatitis, for example, were heartened by a report that human hepatitis virus had apparently induced disease in a laboratory animal. If the work is substantiated, a long-needed break in hepatitis vaccine research would seem to be near.

Still other medical news in 1964 was made by:

—the harsh judgment on cigarette smoking rendered by the Public Health Service Surgeon General's Advisory Committee on Smoking and Health.

—emergence of the optical maser, or laser, as a potentially powerful weapon against some types of cancer, and ultrasound as an important diagnostic tool.

—the American Medical Association and the Food and Drug Administration as they began to trade information on drugs and drug therapy in a new program of cooperation and computerization.

—encephalitis of epidemic proportions in Texas and New Jersey, with a scattering of cases in several other states.

One of the most dramatic developments in the virus-leukemia story came from England. Dr. Michael A. Epstein and colleagues of the Middlesex Hospital Medical School in London reported the first apparent transmission of human cancer to laboratory animals, and apparent success in growing a virus-like particle that is assumed to cause the disease.

The investigators said that African green monkeys developed apparently typical Burkitt lymphomas within two years after being inoculated with suspensions of fresh lymphoma cells from human patients. The Burkitt cells also were established in cell culture where they elaborated a small quantity of virus-like particles. Burkitt lymphoma is a leukemia-like disease of the tissues which produce white blood cells. Named after the British surgeon who recognized it in 1958, it occurs among children in limited areas of tropical Africa and may be transmitted by insect bites.

The possibility of transmission by insects is a strong argument for a viral cause of this particular form of human cancer. Probably only some infective agent, such as a virus, could be carried by insects from a Burkitt lymphoma victim to a previously unaffected person. It isn't likely that lymphoma cells could be transmitted by insects from one person to another. Neither is it likely that human lymphoma cells, rather than some agent carried by the cells, were responsible for the apparent disease produced in laboratory monkeys; human cells inoculated into monkeys are probably quickly destroyed by the monkey's immunologic defenses.

Human leukemia cells yielded viruses or virus-like particles to several teams of investigators during 1964, raising hopes that further study will pin down a relationship between the particles and the disease. Proof of a relationship has been elusive, though, and some scientists think it could remain so for a long time.

Investigators have been testing the viral theory of leukemia in animals for more than 50 years, ever since the discovery of fowl sarcoma virus in 1911. Fowl and mouse leukemias have been studied intensively, and attention also has been paid to leukemia in rabbits, hamsters and other animals. Viruses have been isolated in several instances and both fowl and mouse leukemias have been transmitted in the laboratory by means of cell-free filterable material. But, as the British medical journal "The Lancet" pointed out editorially this year, "it is fair to say that the immense expense of effort, time, and treasure on the study of fowl and mouse leukemias has brought little help to our understanding and management of human leukemia."

Among the 1964 reports of virus isolations from human leukemia, those which excited medical interest included:

—Work by Dr. G. Negroni of the Imperial Cancer Research Fund, London, in which tissue-culture techniques were used to isolate a virus from the bone marrow of 10 out of 25 leukemia patients. The virus, which produced cytopathic (injurious to cell) changes in tissue-culture cells, was photographed by electron microscopy and was said by Dr. Negroni and colleagues to resemble viruses recovered from mouse and fowl leukemia. Serum from leukemic patients weakly neutralized the virus, but the virus produced no disease when inoculated into newborn mice, hamsters and ferrets.

—The production of what appeared to be preleukemia symptoms in monkeys which received injections of virus particles obtained from leukemia patients. This work by scientists at the U. S. National Cancer Institute gains in potential importance when seen in the light of Dr. Epstein's apparent success in transmitting Burkitt lymphoma to monkeys.

—The production of a fatal leukemoid disease in mice with virus-like agents isolated from the bone marrow of leukemic children. Dr. William H. Murphy and colleagues of the University of Michigan, Ann Arbor, concluded after carrying out antibody and other tests that an association could be suggested between the virus-like particles and leukemia in children.

The burst of new knowledge in leukemia research has prompted the National Cancer Institute to push a new multimillion-dollar research program with funds voted by the U. S. Congress. Immediate aims of the program will be to use new leukemia cell-culture techniques to grow suspected leukemia viruses on a large scale for detailed investigations, to develop other investigational tools, and to organize teams to carry out epidemiologic studies.

Because many of the leukemia-associated viruses appear to be related antigenically and in appearance, some thought has been given to the possible future preparation of a leukemia vaccine. If a specific virus is involved in the development of leukemia, it should be possible to produce a vaccine to immunize human beings against the virus. Most leukemia investigators hesitate to talk about a vaccine, however, pointing out that production of one is probably many years away, if it proves possible at all. Too much talk of a vaccine at this point in leukemia research, they say, only serves to uselessly and cruelly raise the hopes of leukemia victims and their families.

In the case of infectious hepatitis, a disease of proven viral origin, a vaccine may actually be on the horizon if work carried out in 1964 is substantiated and extended. Again, even with luck, a vaccine suitable for extensive use would probably be years in the future.

As in leukemia research, hepatitis research has been hampered by the fact that animals used in the laboratory were not susceptible to forms of the disease which occur in humans. Full-scale investigation of a disease and preparation of vaccines require large numbers of susceptible animals for use in experimentation.

A cautious report that the first susceptible animal may have been found came this summer from investigators at Tulane University's Delta Regional Primate Research Center in Louisiana. A West African monkey—a member of the species Erythrocebus patas—developed what appeared to be hepatitis after she and eight others were inoculated with a virus strain obtained from a human hepatitis victim.

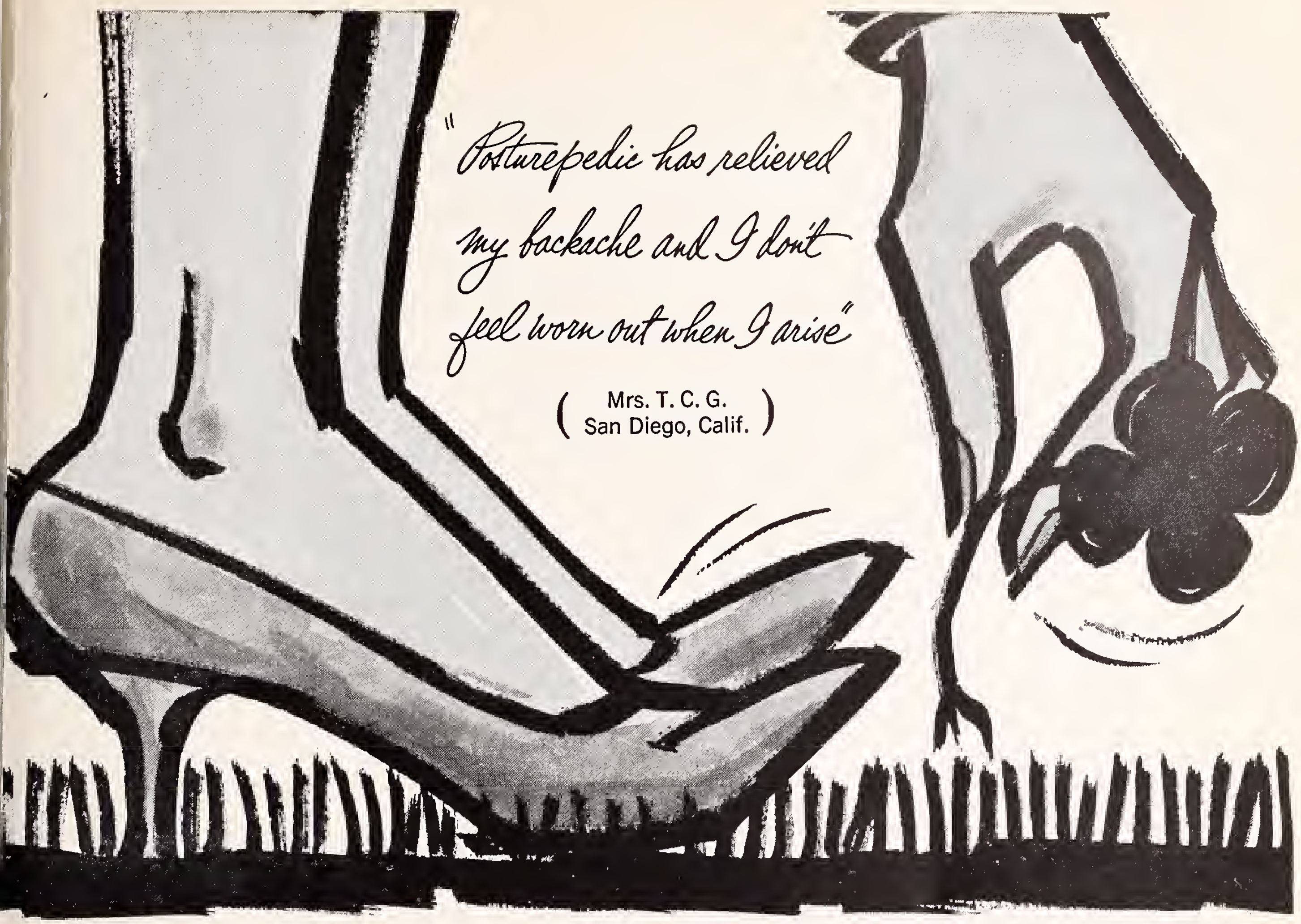
Primate Center researchers almost immediately began to design a larger experiment, using 150 patas monkeys, to determine whether the results of the smaller experiment could be repeated. Military and public health authorities are watching with interest. Infectious hepatitis is the severely debilitating and sometimes fatal disease which strikes in 7-year epidemic cycles in the United States and constitutes one of the gravest health hazards to American military and civilian personnel in Southeast Asia.

Infectious hepatitis is not to be confused with serum hepatitis, a less frequent disease but one more likely to be severe. Whereas infectious hepatitis is usually transmitted by viral contamination of food or water, serum hepatitis is contracted when virus-containing blood or plasma comes into contact with the bloodstream of an uninfected person. Transfused blood and unsterilized hypodermic needles are common carriers of serum hepatitis virus. Whether the viruses of infectious and serum hepatitis are identical or different is a question debated hotly by investigators.

The person who pondered the relationship, if any, between smoking and lung disease was not alone in 1964. On January 11, the Public Health Service Surgeon General's Advisory Committee on Smoking and Health reported on its comprehensive review of the scientific literature.

The committee members said they found a statistical relationship between smoking, particularly cigarette smoking, and several respiratory diseases, lung cancer included. The findings of the report had been anticipated, but seeing them in black print caused a worried smoking public to become even more apprehensive. A flurry of concern also was touched off in the medical profession and among cigarette manufacturers and various government agencies.

In late 1963, just prior to release of the report, the American Medical Association took action recognizing the magnitude of the smoking-and-health controversy. It announced that its Education and Research Foundation would sponsor studies aimed at determining: (1) which important human ailments are caused or aggravated by smoking; (2) how they may be caused; (3) the particular element or elements in smoke that may be the causal or aggravating agent, and (4) methods for eliminating any such agent. The AMA Board of Trustees appropriated $500,000 to launch the program and later six major tobacco firms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made an unrestricted five-year grant of $10,000,000. The AMA Education and Research Foundation disburses the money to independent investigators; the AMA itself does none of the research. By the end of October, 28 grants totaling $1,041,804 had been made.

The concentrated light beam of the laser burned a place for itself in medical news during the year when it was used for experimental treatment of melanoma, a highly malignant form of skin cancer. Reports told of the treatment of three patients at the Pasadena (Calif.) Foundation for Medical Research and one patient at Tufts-New England Medical Center in Boston. The laser (light amplification by stimulated emission of radiation) is an instrument in which crystalline ruby or some other substance is used to amplify a light pulse and concentrate it into a tight beam of coherent frequency. Although results of the treatment were good, destroying more than 99 per cent of a tumor in one instance, investigators at both institutions said they will probably regard the laser as an experimental anti-cancer weapon for some time to come.

Ultrasound, on the other hand, has already moved into the hospital as a diagnostic tool. Diagnosis by ultrasound is based upon the same principle as sonar, the technique used by the Navy to detect submarines by bouncing sound waves off their hulls. In medicine, high-frequency sound waves are transmitted into the human body by special equipment, which also detects the echo of waves bounced off organ walls or bones. The time lag between transmission and echo serves as a measurement of tissue density. Since every tissue has a characteristic density pattern as measured by ultrasound, deviations may indicate a disease process.

Although ultrasound diagnosis is used in place of X-ray diagnosis on occasion, it is generally regarded as a supplement to X-ray rather than a replacement.

So far, ultrasound diagnosis has proven useful in scanning the liver and other internal organs, in echoencephalography to detect bleeding or other space-consuming pathologic processes in the brain, and in certain obstetric examinations. At Walter Reed Army Medical Center, an ultrasonic probe coupled with a surgical extractor was used to locate and remove a piece of brass cartridge casing from a child's eye. The operation, which would have been impossible without ultrasound, was the first clinical use of the instrument designed by Dr. Nathaniel Bronson of the Southampton Hospital, Long Island, N. Y.

The thalidomide incident of 1961 continued to echo in 1964 with the announcement of cooperation between the American Medical Association and the Food and Drug Administration. Cooperation will center for the present around adverse drug reactions, an area of major medical and public concern since a supposedly harmless drug, thalidomide, proved to have a powerful deforming effect on human embryos.

The task of receiving adverse reaction reports will be split between the AMA and the FDA, and significant information exchanged on data-processing cards. Separate reporting systems formerly maintained by each organization will be abandoned, doing away with unnecessary duplication. Data-processing equipment is being installed which can program information for exchange and for maintenance in permanent files.

The AMA file will be maintained by the Central Registry of Adverse Reactions to Drugs and Chemicals. Expanded steadily in the post-thalidomide years, the Registry's function is to: (1) gather information furnished voluntarily by doctors, certain hospitals and other sources on possible reactions to drugs, pesticides, and household and economic chemicals; (2) evaluate these reports, and (3) inform the medical profession promptly as to the nature and significance of reactions to toxic or potentially toxic agents. The FDA information file, while complementing that of the AMA's, will not serve the same primary purpose. The FDA's chief function is to regulate drug safety and efficacy, whereas that of the AMA's is to educate and inform the physician.

In final planning stages is a registry of pathologic specimens from adverse drug reaction cases, to be maintained at the Armed Forces Institute of Pathology, Washington, D.C. Cooperating in furnishing cases will be the AMA, FDA, and the Pharmaceutical Manufacturers Association. The file is expected to be of value to investigators studying the pathology of adverse reactions, and to clinicians dealing with suspected but undiagnosed reaction cases.

In some sections of the United States the medical news of the year was an epidemic. Infectious encephalitis, viral disease believed transmitted in many cases by the bites of mosquitoes, appeared in epidemic proportions in parts of Texas and to lesser extents in Kentucky, Illinois and Colorado. Some Texas cities and especially Houston were hard hit in mid-summer; Houston undertook an intensive insect spraying program in an effort to reduce the mosquito population. By autumn the Texas epidemic and Midwest outbreaks appeared on the wane, but a new series of cases was beginning to grow in New Jersey. The U. S. Public Health Service said the New Jersey cases seemed to involve the same virus—St. Louis type—that was associated with the Texas epidemic.

Booming Industry: Slumber Mongers

Beware of slumber mongers.

"While millions of Americans are tossing and turning in their beds, a growing legion of slumber mongers are making hay peddling pills, powders, drinks, and devices designed to wring cash from the sleepless," according to an article in the current *Today's Health* magazine, published by the American Medical Association.

The problem of sleeplessness is genuine and serious with even the best adjusted person occasionally having difficulty falling asleep, the article points out.

"Unfortunately, many of those on the rack of insomnia clutch frantically for any promised relief," the article said. "This is especially true of the majority of those suffering from chronic insomnia where the sleeplessness is due to causes that are described as 'neurotic.' "

Not all sleep aids are utterly valueless, the article continued. A few may actually be helpful where the insomnia is not too severe.

"But most of them are of little, if any, value in severe chronic conditions; some of the non-prescription medications may be dangerous because of a human tendency to believe that a bigger dose might improve the result; and practically all but the home remedies cost far too much for the purpose."

The chronic insomniac ultimately will turn to drugs since he will probably find no sustained relief from homemade remedies such as reading a dull book or counting sheep, or from gadgets which range from ear plugs to stuffed chairs advertised as being able to massage the occupant into a state of relaxation.

"In this area, that of the over-the-counter sleep preparations, the panacea peddlers find their Eldorado," according to the article.

Such products that may sell at a relatively low price when marketed for one purpose seem to leap in cost when packaged as a sleep promoter. For example, 30 pills containing mostly aspirin, some antihistamine and minute amounts of other sedatives cost $2. when sold as a sedative for sleeplessness while another antihistamine-aspirin preparation offered for relief of hay fever costs only about half as much.

A vastly more effective sedative, a prescription drug, can be had for about $1. for 30 tablets, the article pointed out.

Prescribed by a physician, barbiturates are usually effective in most sleeplessness and can be used for long periods without ill effects unless the patient suffers from a severe personality disturbance, it said.

Over-the-counter preparations sold for sedation and relaxation, to ease tensions, or overcome insomnia generally contain one or more of three groups of drugs—antihistamines, hypnotics such as scopolamine, and sedatives of the bromide group, it was explained. Many also contain aspirin, vitamins and other substances not necessarily related to sleep.

With regard to the antihistamines, drowsiness is only a side effect produced by these drugs and does not always occur. In addition, the more effective antihistamines may not be sold without a prescription. Those that are sold without a prescription may be variable in effect.

The AMA Council on Drugs has said: "It is our opinion that it would not be a reliable remedy for a person suffering from insomnia. While certain persons do become drowsy when taking antihistamine preparations, such effect is not uniform and most persons will build up a tolerance for the drug."

Scopolamine is a toxic substance and can be included in nonprescription preparations only if the amount is so small as to be virtually inactive. Sedatives of the bromide group are generally sold over the counter in doses small enough to be harmless. However, there have been reports of serious symptoms resulting from overdoses of bromides and scopolamine sold in nonprescription products.

German Measles In Pregnancy Confirmed By Lab Tests

Laboratory tests have been devised which can determine whether a woman exposed to German measles during pregnancy actually contracted the infection, Dr. Stanley A. Plotkin, Philadelphia, reported recently.

The laboratory techniques were made possible by isolation of the virus which causes German measles in 1962, Dr. Plotkin wrote in the current Journal of the American Medical Association.

Confirmation of German measles is of particular importance to an expectant mother because the disease, if contracted in the early stages of pregnancy, can cause mental retardation or other defects in the offspring.

Diagnosis of German measles is frequently difficult, Dr. Plotkin pointed out. It occurs in mild and atypical forms, he said, and the rash which accompanies other virus infections can be indistinguishable from that of German measles.

Confirmation or denial of the disease in the expectant mother can determine whether therapeutic abortion is to be considered.

Dr. Plotkin said his laboratory had been "deluged" with requests for help in such cases and suggested that public health laboratories might consider the development of similar services for their Communities.

One drawback to the laboratory procedure at this time, he added, is the delay between the collection of nose and throat swabs and blood samples from the patient and the results of the tests, which varies from 10 days to three or four weeks.

However, he said, improved techniques which will sharply reduce this time period are now being developed and will be available in a year or two.

Dr. Plotkin reported on 24 women who had been exposed to the disease or had suffered illnesses similar to German measles during pregnancy. The 24 cases were drawn from numerous women exposed during the epidemic which occurred in the eastern United States during the past winter and spring.

The cases demonstrated that the laboratory tests could be used to confirm the disease in order to exclude the possibility that an illness was caused by another agent; to confirm the disease when the symptoms were not typical; to attempt confirmation of recent infection when the patient was not seen by a physician during the rash; to determine whether an infection occurred after exposure to the disease when no symptoms became apparent; and to establish a more precise diagnosis of complications of German measles such as encephalitis.

The results indicated that evidence of German measles may be determined from a blood test if the first blood sample is obtained within two weeks of the onset of the rash and a second sample, two weeks later, according to the report.

Dr. Plotkin is affiliated with the Wistar Institute of Anatomy and Biology and Children's Hospital of Philadelphia.

Artificial Kidney In Home Feasible, Less Costly

Home use of the artificial kidney machine today was termed "technically feasible where suitable domestic facilities exist."

In addition to the greater convenience offered the patient, in-the-home treatment also is less costly than when it is performed in an artificial kidney center, according to a report in the current Journal of the American Medical Association.

Use of the artificial kidney in the homes of three patients was described by J. P. Merrill, M.D., E. Schupak, M.D., E. Cameron, R. N., and C. L. Hampers, M.D., Boston.

The patients have undergone a total of 30 home hemodialyses, the process of cleansing the blood of waste products, and the results were comparable to those carried out in the hospital, the authors said.

Although the patients were not completely rehabilitated, they were able to work six hours a day between dialyses, it was reported.

Dialyses were performed once a week at home and once a week in the hospital after an inital period of hospitalization during which the patient's condition was stabilized. Home treatment is suitable for ambulatory patients capable of employment but not for the acutely ill, it was pointed out.

One patient had been treated for nine months during which 17 dialyses were performed in the home. The second patient had been treated for four months and undergone 10 home dialyses. The third patient had been treated for three months with three dialyses in the home. Each dialyses, using the twin-coil artificial kidney, lasted four to six hours.

The estimated cost of the twin-coil kidney machine and necessary equipment for home dialysis would be about $2,000, according to the authors. The cost per dialysis would be $85, not including professional fees for the physician, who would check the patient before each dialysis, and for a private duty nurse, who would monitor the procedure.

The cost of maintaining eight patients through use of the artificial kidney has been estimated at $10,000 per patient per year at the chronic dialysis center in Seattle, it was pointed out. However, the development and marketing of a single-coil disposable unit for the artificial kidney at one-half the price of the twin-coil would reduce the annual expense to about $5,500, the authors said. This product is expected to be available in the next few months.

To make a program of home dialysis a "practical endeavor" requires improvements, the authors concluded. Nursing personnel must be made available or nonprofessional personnel trained to monitor the procedure, they said, and the coordination of the cost of this kind of care with present medical insurance plans must be attempted.

One way to implement such a program might be a mobile unit, in which two or three patients could be treated at one time and which could move from community to community with full-time experienced team, the authors suggested.

It is estimated that in the United States, 2,000 patients who annually die of chronic kidney failure might survive with use of the artificial kidney, the authors added.

It has been adequately proven that for some patients with chronic kidney failure in whom conservative treatment is inadequate, useful existence may be maintained for significant periods of time by the use of the artificial kidney, they said.

It is anticipated that this technique will be used to maintain patients until transplantation of a human kidney can be performed, they added.

The authors are affiliated with Peter Bent Brigham Hospital and Harvard Medical School.

Gold Leaf Used To Patch Blood Vessels, Tissues

Gold leaf has been used successfully to patch punctured blood vessels and defects in other body tissues, including the brain, Drs. John P. Gallagher and Charles F. Geschickter, Washington, D.C., reported recently.

Gold leaf "displays a unique ability to adhere closely to most of the body tissues including bone" when it is electrically charged, a technique used for centuries by guilders, the Georgetown University researchers wrote in the current Journal of the American Medical Association.

"Its adherence, malleability, chemical inertness, and tensile strength render gold leaf of singular value in surgery," they said.

It acts like a patch when placed over a tear in a blood vessel, on a bleeding capillary surface, or on an opening in a membrane, they explained. This allows normal healing which renders the seal permanent, they added.

In 10 patients, charged golf leaf was used to stop bleeding from arteries and veins on the dura mater, which is the outer membrane of the brain, the cerebral and cerebellar cortex, and the surface of the spinal cord, according to the report. It also was used to control bleeding from soft tissues such as muscle.

"It was found to be ideal for sealing small holes in the dura mater and as a protective cover for sutured incisions in this membrane," the authors said.

None of the patients displayed any evidence of adverse reaction to the gold implants and in all cases the wounds healed, they reported.

For generations the permanent arrest of hemorrhage from arteries and veins as well as from oozing capillary beds has been a serious problem for surgeons, the authors commented. Tieing off large blood vessels to control bleeding is often not feasible. Other methods of controlling hemorrhage depend on the formation of a blood clot which may block the blood vessel completely.

The gold leaf patch does not rely on the formation of a clot, and animal studies showed application of the gold patch to a wounded vessel does not reduce circulation, the researchers stressed.

The gold leaf is electrically charged merely by stroking a camel hair brush against a rubber comb and touching the leaf to the positively charged brush. The leaf adheres to the brush until it is touched to living tissue. Then it is promptly released and clings tightly to the tissue. In view of this, living tissue apparently has a negative charge, the authors said.

Under normal laboratory conditions, foil loses an electrostatic charge in a matter of a few minutes, the authors pointed out. However, they said, animal experiments proved there was prolonged electrical attraction between tissues and gold leaf.

The same principle has been used for centuries by guilders who draw a brush over their hair until it is charged sufficiently to pick up the gold leaf they wish to apply, according to the Journal article.

Gold leaf is made by the time honored method of beating sheets of pure gold with a wooden mallet. Microscopic examination revealed that gold leaf is composed of stratified layers of metal. It is about 1/280,000ths of an inch thick, consisting of 98 per cent gold and 2 per cent alloy, added as a hardener.

It is the most malleable of all metals and blends into depressions and irregular surfaces with ease, the authors stressed. Even when beaten into thin sheets, it still retains its tensile strength.

Unlike silver and tin, elemental gold is chemically inert and appears to be ideal for use in human tissues.

For surgical purposes, gold leaf should be two or three times as thick as the leaf now available, the authors added. Commercial leaf contains minute holes, which are apparently thinned areas due to excessive beating. A thicker leaf can be obtained simply by stopping the goldbeating process at an earlier stage.

Electrically charged gold leaf also clings to the skin for a number of days if the site is protected with a covering, the authors added.

Although gold salts and gold plate have been used previously for therapeutic purposes, no references to the use of charged leaf or foil in surgery or medicine could be found in the medical literature, they said.

New U. S. Figures Prompt AMA To Study Future M.D. Supply

The American Medical Association is studying new information which rasises questions concerning a 1959 estimate that 20 to 24 new medical schools would be needed by 1975 to supply an adequate number of physicians for the nation's growing population.

An editorial in the current AMA Journal discussed projections made in the 1959 Bane Report by the U. S. Surgeon General's Consultant Group on Medical Education in light of information published in the 1964 Health Source Book of the U. S. Public Health Service.

The Bane Report said: "To maintain the present physician-population ratio, the expected 1975 population of 235 million will require a total of 330,000 doctors of medicine and osteopathy. This would necessitate the annual graduation of 11,000 students, an increase of approximately 3,600 over the 1959 graduates.

"This increase is equivalent to the output of 20-24 new two-year and four-year schools."

Estimates of the 1964 source book are that by 1975 there will be 356,900 physicians (M.D. and D.O.), even with an annual graduation rate reaching only 9,185, the editorial pointed out.

"The difference is due primarily to two factors: an underestimate of the physician population at the time of the Bane Report and an underestimate of the number of new licentiates from foreign medical schools," the editorial said.

"The Bane report projections assumed that new foreign licentiates would level off at about 750 per year, which at that time seemed reasonable. However, they have been about twice this number and show no sign of decline.

"The new estimate is 1,600 new foreign licentiates annually. However, recognizing that this figure could change sharply in the future, the USPHS report has offered two additional projections, one based on a decline of new foreign licentiates to 1,000 per year and one based on no new foreign licentiates after 1965. Even with this last extreme assumption, the total physician group is estimated at 340,900 by 1975, almost 11,000 more than the number called for by the Bane Report.

"The difference is further magnified by the fact that birth rates have not been as high as anticipated and total population estimates have been reduced accordingly.

"The Bane population estimate for 1975 was 235 million; current projections place it somewhere between 220 and 230 million."

Also pertinent to the problem is the fact that modern physicians are undertaking a wide variety of new activities and the percentage of those in private medical practice is declining, the editorial pointed out.

It is clear that all of these factors, and others, are related to the problem of supplying enough physicians to meet the needs of the public for medical care, the editorial said. These new figures will require careful study to determine their true implication for medical education, it said, and the AMA Council on Medical Education has already initiated such a study.

Pneumatic Drill Implicated In Raynaud Disease

Vibration caused by the use of a pneumatic drill may be the primary cause of disabling numbness of the fingers seen among miners, medical researchers reported recently.

The condition, termed Raynaud disease, is brought on by exposure to cold. The arteries of the fingers contract and they become white and numb with the sensation of tingling and tightness.

A study of mine workers from Saskatchewan in northern Canada supports the theory that the primary offender is hand vibration while the secondary offender is cold, Drs. William F. Ashe, Columbus, Ohio, and N. Williams, Regina, Sask., Canada, wrote in the current Archives of Environmental Health, published by the American Medical Association.

Raynaud's phenomenon of occupational origin in hard-rock drillers apparently is "a gross exaggeration of normal constrictive vascular responses brought on by prolonged exposure to violent mechanical vibration," they concluded.

The study also showed that attacks are precipitated by cooling of the entire body rather than cooling of the hands alone, they added.

The conclusions were based on observations of seven Canadian miners compared with three medical students without mining experience under experimental conditions at University Hospital in Columbus.

An analysis of 42 cases of Raynaud disease among Canadian miners indicates that there are four contributing factors—operation of pneumatic tools of relatively high frequency and large amplitude; holding the tool with the hands; a cold, wet environment, and long continuous exposure to this environment, the researchers added.

Raynaud disease has not been observed in other underground employees of these mines who do not operate pneumatic drills but who work under otherwise similar conditions, they pointed out.

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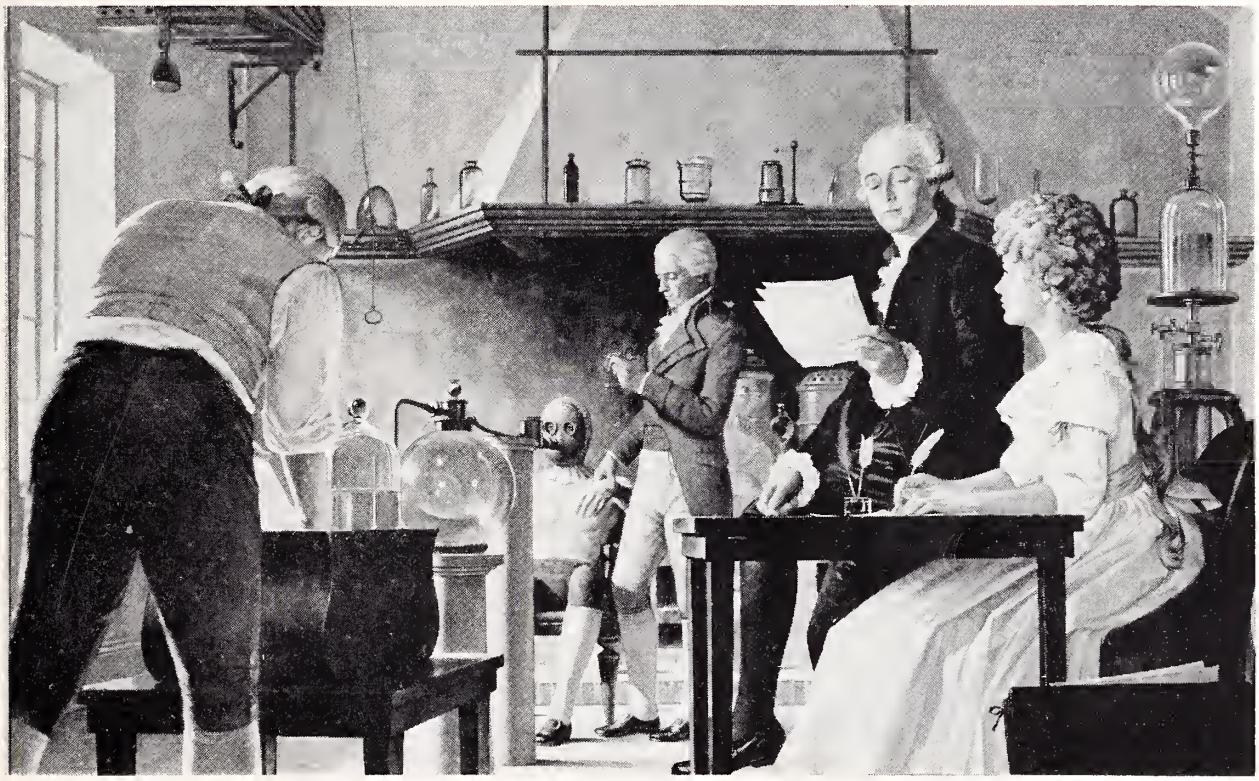
WOUND INFECTION. Forum Hartford Hospital. Edward L. Howes, M.D., *Guest Editor*



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LAVOISIER: OXYGEN AND RESPIRATION (see page 75)

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*Roseman, E.: *Neurology* 11:912, 1961. 33664

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Connecticut Medicine

editorials

Behavior Pattern A And Ischemic Heart Disease (I.H.D.)

It is now common knowledge that various emotional states can and do acutely alter many functions of the cardiovascular system. The physician often sees patients with quickened or irregular pulse, blush or pallor, acute rise in blood pressure or even its collapse who may be frightened, anxious, angry, embarrassed or even extraordinarily happy. We all know that these cardiovascular changes are mediated by the autonomic nervous system, under the egis of the higher centers. These are acute changes and we are in the habit of believing that no permanent effects can remain. The physician does not see permanent hypertension or tachycardia after frequent episodes of emotionally induced rises in pulse rate or blood pressure and does not believe that permanent alterations in the heart or blood vessels can be induced by an emotional disturbance.

Some investigators, however, as well as great poets, who are intuitively oriented, have entertained the idea that permanent changes can and do occur not only in various functions but also in various tissues of the cardiovascular system following frequent exposure to various emotional stimuli. They have wondered whether factors other than those commonly studied were playing any role in the morbidity of I.H.D. The first question Friedman and Rosenman[1] asked of themselves was whether such patients exhibited any indentifying or diagnostic complex of emotional factors. Once this question was asked and an attempt made to answer it, it became clear that younger patients under the age of approximately 55 years uniformly possessed a "characteristic emotional facade." This emotional facade not observed in older patients with I.H.D. they termed Behavior Pattern A. Fundamentally it consists of those feelings and their motor expression exhibited even at rest by an individual possessing an "exaggerated drive, ambition, aggressiveness, competitiveness, and above all a sense of time urgency." Of course few persons do not possess some or all of these attirbutes at some time, but the young patient with I.H.D. possessed them to a much greater extent. It is the extreme exaggeration of one or more of these attributes that prevents relief and relaxation in situations where there is no need to exhibit drive, competitiveness or sense of urgency.

In the majority of instances it seemed to Friedman and Rosenman that it was the sense of time urgency which played the most frustrating and hence the most important part in the genesis of this behavior pattern. If a man's ambition and drive was unchecked, no matter how efficient he becomes, he will increasingly destroy himself. Such people are not neurotic in the usual sense, do not appear in a psychiatrist's office, and therefore psychiatrists are not too conversant with this syndrome.

Of course, recognition of the presence of a particular behavior pattern in the majority of younger coronary patients does not in itself demonstrate a causal connection. How could such a form of behavior operate to produce or aggravate coronary heart disease. Does it produce changes in blood coagulability, does it alter blood cholesterol levels. Such relationships had been widely suspected in ischemic heart disease. A study of accountants before, during, and after tax-deadline in regard to these two blood entities, made it quite clear that Behavior Pattern A indeed did hasten clotting and

THE COVER

LAVOISIER: OXYGEN AND RESPIRATION

GREATEST contribution of science to Medicine during the eighteenth century came from experiments relating to the processes of respiration, conducted between 1789 and 1792 by the Parisian chemist, Antoine Laurent Lavoisier, in his laboratory at the Royal Arsenal. Mme. Lavoisier was his closest collaborator. Together with a young assistant, Séguin, Lavoisier recorded oxygen intake and carbon dioxide exhalation by a man while resting, while working, and while eating. Lavoisier made many scientific, social, economic, financial, and political contributions before French revolutionary radicals executed him in 1794.

elevate blood cholesterol. Clearly emotional stimuli did appear to affect specific biochemical processes.

Blood cholesterol and coagulation changes are not, however, necessarily nor the only possible causes for induction of I.H.D. It was obvious that more evidence than what came out of the above study was needed before emotional perturbation could be causally related to heart disease. Friedman and Rosenman therefore embarked upon a much longer investigation in which subjects were selected from the community solely upon the basis of whether they exhibited Behavior Pattern A. So classified, the subjects were then studied, in respect to their diet, exercise, their alcohol consumption activities, their blood cholesterol, their blood clotting propensities and finally as to the incidence of actual heart disease. If the peculiar behavior pattern almost always observed in the younger patient with I.H.D. preceded disease, and had a causal relationship to it, then one would expect that a group of subjects selected solely because they possessed Behavior Pattern A should also exhibit a significantly greater incidence of I.H.D. Accordingly they selected large groups of both men and women who exhibited Behavior Pattern A as well as a comparable number of subjects exhibiting an opposite Pattern B.

The results of the studies made it clear that although the fat consumption and exercise habits of the subjects with Pattern A were essentially identical to those of the control subjects, nevertheless they exhibited a significantly higher cholesterol and blood clotting time. More important, however, was the 5 times greater prevalence of already present heart disease in the subjects with Behavior Pattern A. We are thus presented with the fact that a particular behavior pattern was almost invariably present in the younger patients with I.H.D. Conversely that I.H.D. appeared to occur strikingly more frequently in subjects exhibiting Behavior Pattern A.

The great question now is does Behavior Pattern A lead to earlier heart disease or is this special pattern associated with some other still to be recognized factor that is hastening the disease onset. The authors have already learned that the individuals with Behavior Pattern A shows increased excretion of nor-epinephrin, shows a higher fasting level of serum triglycerides, lipoproteins and cholesterol. They show a marked retardation of clearing of chylo-micronous fat and enhanced sludging of post-prandial products. The hemodynamics, however, have not been directly affected by this pattern.

Very much more of course remains to be accomplished in this field. But one fact emerges clearly that emotions can and do participate in the pathogenesis of I.H.D. though the mechanisms involved remain to be elucidated. There is thus added one more factor to the pattern emerging to characterize the "coronary prone male." To hypertension, obesity, hypercholesterolemia and smoking we can add Behavior Pattern A. Clearly people with Behavior Pattern A will have to change their philosophy and their outlook on life before they can stop killing themselves.

L.H.N.

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Exercise Training In Patients With Emphysema

The influence of work, exercise, and stress on the cardiopulmonary system has not been adequately defined and in fact some of the data has been inadequate from which to form a clinical judgment. This is a problem that is not limited to any special group such as athletes, but concerns patients with cardiac and pulmonary disease and perhaps other chronic diseases as well. The physician would like to know to what extent and how an individual cardiopulmonary patient can improve his status by some form of training and exercise without the risk of untoward effects. We would like to know whether a pulmonary patient can improve his peripheral circulation to relieve a burden on the heart or his lungs.

Barach and associates have repeatedly reported clinical observations that patients with chronic pulmonary emphysema are in relatively better health for longer periods of time than their more sedentary counterparts. Such observations prompted Pierce et al[1] to reassess the physiological responses to progressive exercise training in nine patients with advanced obstructive emphysema. If you can measure something you can begin talking about it. And so they undertook to study effect of exercise by measuring the oxygen cost and carbon dioxide production for a given level of exercise. They were also able to construct the oxygen debt in the patients before and after training. From such data it should be possible to determine whether exercise is beneficial or harmful to a patient which in this case was obstructive emphysema.

Physical fitness has been defined as the ability to maintain certain cardio-respiratory functions as closely as possible to the resting state during strenuous exertion and ability to restore promptly to normal after exercise any disturbed function.[2] The maximum speed at which a patient can walk for 2.5 minutes and the length of time a patient can walk at any particular speed reflects the physical fitness to some degree. Both of these measurements

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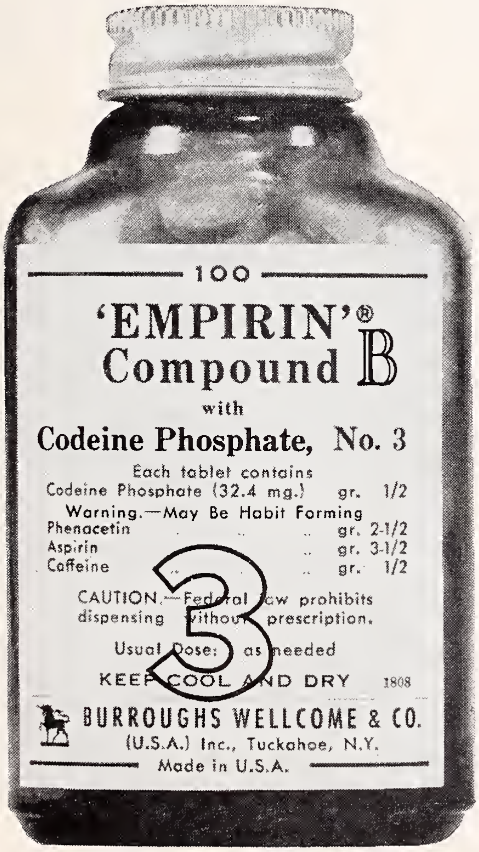

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were used by Pierce et al in their study. The subjects were at various states of physical conditioning at the outset and they were trained for varying lengths of time. The treadmill walking method the authors used did not require new skills. The patients had the procedure explained to them and this helped in rendering them relaxed and cooperative. No evidence appeared in the study to suggest that increasing motivation developed as a role in improving function. There are other factors too such as temperature and humidity that play a major role in performance, but these were not problems in the study of Pierce et al.

In the nine patients studied after training, there was improved ability to achieve maximum speed in performing work from 2.5 to 30 minutes, speed that could finally be tolerated. The oxygen cost and carbon dioxide given off for a given level of exercise was reduced an average of 30 per cent by physical training. The patients were also able to contract an oxygen debt 65 per cent greater after training than before. There was a decrease in heart rate, respiratory rate, minute ventilation for any given level of activity. The improved efficiency following training was further indicated by a more rapid return of these parameters to resting levels after the termination of exercise. It is clear that following training the patients showed increased capacity for work. They could walk longer at the same speed. At faster speeds, they can consume more oxygen, produce more carbon dioxide and contract a larger oxygen debt.

These results are qualitatively comparable with those obtained in training studies on normal subjects.[3, 4] The precise mechanisms by which the beneficial effects of physical training take place in the normal subjects, however, require further elucidation. The mechanisms proposed include better coordination of neuromuscular activity, improved cardiac function and increased efficiency of muscular action. It is reasonable to believe that similar mechanisms were operative in the patients with obstructive emphysema. One additional effect of training in these patients was a more efficient respiratory pattern even though the pulmonary function did not change. The only pulmonary function test which did change significantly was the forced inspiratory flow and this can probably be related to the generally increased ability to perform muscular work, in other words improvement in the peripheral circulation of respiratory and other muscles.

We know that in muscles of average subjects there is an increase in arteriovenous difference with increase in oxygen uptake. Obviously a large arteriovenous oxygen gradient in working muscles would reduce the need for an increase in cardiac output. It would, however, require ability on the part of muscles to work at a lowered oxygen tension, to bind lactic acid and prevent flooding of the system with this metabolite. It would also involve ability on the part of the central nervous system to work at a higher lactic acid concentration and increasing the rate of lactic acid removal by the liver. Whatever the peripheral mechanism which comes into play in training, one thing is certain: there is a reduced work of the heart in patients who are physically trained.

This is born out by this and Cherniaks'[5] study of the patients with obstructive emphysema. Five of the nine patients had electrocardiographic evidence of right ventricular disease and one had previously had an episode of right ventricular failure, with edema and a high venous pressure. The training response was not different in these patients from the response in the other patients. The exercise program did not precipitate heart failure. In other words the presence of compensated cor pulmonale in patients with pulmonary emphysema does not contra-indicate an appropriate exercise training program. It is of course understandable why it should not, because the muscles become more efficient including the respiratory muscles,[5] their oxygen consumption for the same amount of effort goes down and the heart is therefore spared.

This study indicates that a relatively modest amount of daily exercise training results in a lessening of the physiologic stress of exercise in patients with emphysema and associated right ventricular disease as evidenced by increases in the patients exercise tolerance, and it seems reasonable to hope that the same results could be obtained in patients with certain other chronic disabling diseases. The clinical implications are clear. Not only patients with chronic obstructive pulmonary disease but patients with other chronic diseases should be encouraged to remain physically active to the limits of their tolerance and should be started on appropriate physical conditioning programs depending of course on the range of disability. Gradually the patients will be able to increase the amount of tolerated exercise. We may be assured that no ill effects can come from such a program and that patients will be able to carry out their customary daily activity with greater ease. The psychological benefits and the zest for living have not been studied, but must also be considerable.

L.H.N.

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Trauma And Occlusive Disease Of Peripheral Vessels—Some Medico-Legal Aspects

It is important that we have some knowledge of the role of trauma in causing or aggravating peripheral vascular disease. First because we may expect to deal with injuries of the extremities and the blood vessels of the extremities with increasing frequency. Second because the prolongation of the human life span is bringing many people to an age in which peripheral vascular disease is encountered with increasing frequency. Finally because increasing numbers of persons are being covered by liability laws, workmen's compensation acts, and disability insurance programs so that, however much the physician might desire it, he cannot ignore the medico-legal aspects of post-traumatic occlusive arterial disease.

In a patient with chronic occlusive arterial disease like arteriosclerosis obliterans a mild degree of trauma may precipitate ulceration or gangrene in an already ischemic limb. Relatively mild chronic repetitive trauma, even that encountered in a patient's occupation may result in chronic arterial disease of the fingers or hand. Trauma may also cause aggravation or extension af a previously existing peripheral vascular disease and thus convert a mild circulatory impairment into a severe circulatory impairment. In the presence of chronic arterial, venous, or lymphatic insufficiency an injury to the affected limb may cause complications which might never have occurred or might have been delayed for years had no trauma occurred. When ulceration or gangrene occurs in a patient with chronic occlusive arterial disease it can be traced to a traumatic event in more than half of all cases. Finally trauma is sometimes a factor in the pathogenesis of chronic occlusive or spastic arterial disease such as in chronic occupational occlusive arterial disease of the hand or occupational Raynaud's phenomenon.

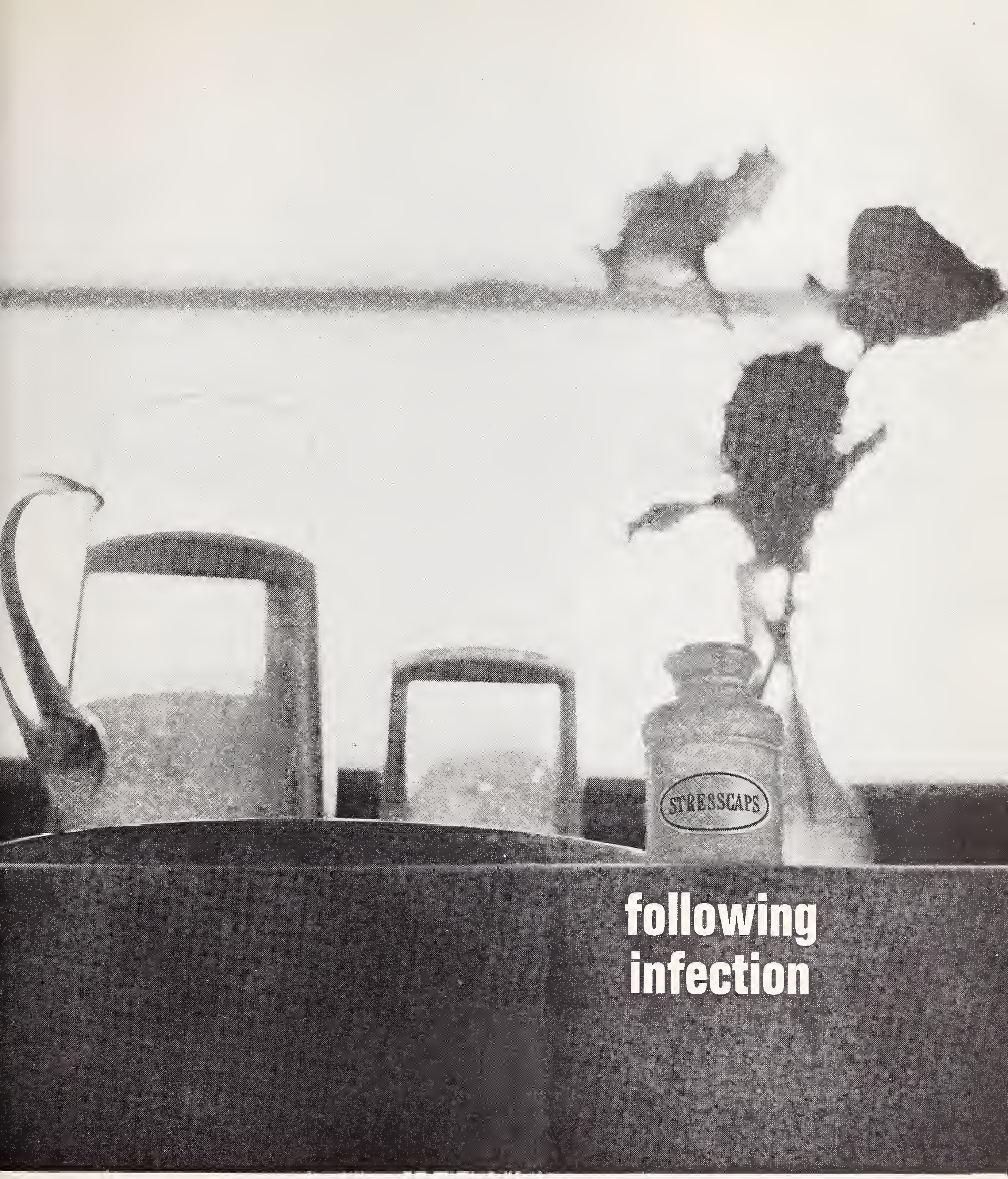
When the relation of trauma to peripheral vascular disease is being considered a single traumatic event must be distinguished from chronic repetitive trauma as occurs in men whose occupation requires a squeezing action of the hand or one in which the hands are subject to considerable blunt trauma or repeated minor contusions in the use of tools. A distinction should also be drawn between a post-traumatic complication or aggravation of pre-existing peripheral vascular disease and trauma as a factor in the pathogenesis of peripheral vascular disease. Finally post-traumatic vascular symptoms and complications that are due to vascular injury should be distinguished from those that are due to non-vascular injuries. This is not always easy. For example, a crushing injury to a limb might result in distal anesthesia and muscle paralysis which could be due to traumatic neuropathy or ischemic neuropathy or both. It may be difficult to differentiate post-traumatic sequela due to disuse of an affected part from the sequelae that result from vascular injury. Finally post-traumatic psychosomatic symptoms may resemble the symptoms from complications of post-traumatic vascular disease.

For medico-legal reasons it becomes important to determine whether the patient had some degree of chronic arterial, venous, or lymphatic insufficiency before the traumatic event. This can be determined if vascular disease is present not only in the injured but in the uninjured extremity as well. If such a disease is found it is probable but not certain that the vascular disease in the injured extremity antedated the injury. If in addition there is a history of previous symptoms suggestive of the disease or the findings of such a disease at a previous examination then there is presumptive evidence of pre-existence of vascular disease.[1]

To establish a cause and effect relationship between a simple traumatic event and arterial occlusion it is necessary to show (a) that the occlusive lesion was not present before the traumatic event. (b) The lesion developed with a reasonable time after the traumatic event usually within two weeks, though Matas has described a case in which occlusion of the axillary artery occurred two years after the trauma. (c) The lesion was produced by trauma of an appropriate magnitude location and type.[2]

Even if vascular disease antedated the injury, the development of an indolent ulcer or gangrene should be considered due to the injury because patients who avoid trauma may have arterial insufficiency for years without these complications. Of course, when gangrene follows trauma it must be shown that this was an unexpected complication of pre-existing occlusive arterial disease and that it occurred within a reasonable time after the injury. Let it be emphasized that much of the trauma that produces gangrene in patients with chronic occlusive arterial disease is avoidable and such patients should be warned about the hazards of even minor trauma so that the patient can take measures to protect the involved extremity.

Of course, acute arterial occlusions and aneurysms of the aorta and arteries of the lower extremities may result from arteriosclerosis without trauma and the relative roles of pre-existing arterial disease and the trauma in the production of these lesions may be very difficult to distinguish. In the upper ex-



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tremity symptomatic arteriosclerotic occlusive disease and aneurysms are rare and therefore it is unlikely that arteriosclerosis can be considered a major factor when arterial occlusion or aneurysm develops after trauma to the upper extremities in older persons. The problem of the relative roles of trauma and arteriosclerosis in the production of aneurysm is complicated by the fact that secondary atheromatous changes may develop in a traumatic aneurysm in the course of time and may obscure the traumatic origin. Which comes first, arteriosclerosis or trauma, may be difficult or impossible to resolve. Of course, a history of symptomatic occlusive arterial disease which antedates the trauma is supportive evidence for the arteriosclerotic cause of a given aneurysm. Then too arteriosclerotic aneurysms are frequently multiple while traumatic aneurysms are usually solitary and saccular.

Chronic repetitive minor trauma results in occlusive arterial disease of the hands and fingers in persons whose occupation require a squeezing action of the hand or one in which the hands are subject to considerable blunt trauma or repeated minor contusions in the use of tools. Persons engaged in farming, mechanics, carpenters are among the most susceptible although the incidence of the disease is low compared to the number of persons who are exposed to sufficient trauma to induce it. The disease has been observed in professional baseball players and even obstetricians accustomed to using traction forceps for delivery. Once the cause is identified further avoidance of trauma is mandatory to avoid permanent physical impairment otherwise the patient may develop gangrene and loss of fingers. The hand affected is always the one most used in the work, there develops coolness, pain and persistent discoloration of one or more fingers. Blanching may occur on exposure to cold and diminished pulsations in the ulnar artery at the wrist are objective evidence of arterial occlusion in the ulnar position of the ulnar arch.

Occupational occlusive arterial disease should be distinguished from occupational Raynaud's phenomenon in which there are no organic occlusive lesions. It may be caused by the use of high frequency vibratory tools such as pneumatic drills and riveters. Interestingly enough in this disease Raynaud's phenomenon usually occurs in the fingers of the non-dominant hand but ultimately involves the other fingers as exposure to cold. In general it is a relatively benign disorder producing no trophic changes of the fingers though they may be unusually susceptible to relatively minor chemical, thermal or mechanical injuries

Occupational occlusive arterial disease should be distinguished from Buerger's disease which usually produces lesions in only one hand and usually starts at a somewhat younger age. A history of repeated trauma and absence of superficial thrombophlebitis supports a diagnosis of chronic occupational occlusive arterial disease.

Thrombophlebitis and pulmonary embolism may develop as a delayed complication of trauma especially if the patient is confined to bed for a long period after the injury. If a surgical procedure was performed to correct an injury and followed by delayed thrombophlebitis, obviously the injury should be considered the primary cause of the patient's illness, since if the injury had not occurred there would have been no need for the operation.

L.H.N.

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Mitral Valve Surgery

Ellis and Harken[1] have just published a statistical analysis of their results of operations on the mitral valve in 1,571 subjects. As a result it is possible to assess the benefits conferred by surgery as well as the factors which influence both improvement and deterioration after initial improvement. The question whether or not to operate on patients with symptomatic mitral stenosis has now become academic since all agree it is a very useful procedure. The questions which remain are how long lasting and how good the results are and what are the conditions that lead to deterioration.

The factors that affect survival have become apparent. Overwhelmingly important factors are the presence of significant valvular calcification and of mitral incompetence at the time of surgery. Patients with either or both of these disabilities die earlier than those without. Of much less importance was the rhythm at the time of operation although with the passage of time patients who were originally in atrial fibrillation have died at an accelerated rate as compared to those with normal rhythm. The degree of initial disability greatly influences the operative mortality, but if the patient survives, the original disability seems of less importance in the long run than the degree of calcification or valvular insufficiency, both of which are common in the very disabled patient. Since men have a higher incidence of calcification than women, they do less well than women. One can confidently predict that two-thirds of the patients who need operation for mitral stenosis will have a worthwhile result 5 years after valvuloplasty. Unfortunately satisfactory results continue to deteriorate at about 5 per cent per year thereafter.

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for relaxing stress-induced smooth muscle spasm

..nothing, that is, except the

sedative-antispasmodic action of DONNATAL®

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PRECAUTIONS: Administer with caution to patients with incipient glaucoma or urinary bladder neck obstruction as in prostatic hypertrophy.

SIDE EFFECTS: Blurring of vision, dry mouth, difficult urination or flushing and dryness of the skin may occur at higher dosage levels, rarely at the usual dose.

* This one at Oak Creek, Castle Rock, Arizona

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Is there any way in which mitral surgery can be improved so that longer lasting results can be obtained. One way of course would be to identify the reasons that some patients do badly. This is now becoming clear. Patients will do well if the valve can be opened widely and is competent after operative manipulation. Of crucial importance is the presence or absence of valvular calcification. There are those who advocate routine open surgery for mitral stenosis. They contend that adequate visualization of the valve permits more accurate and careful fracture of the commissure and relief of subvalvular stenosis as well as debridement of calcium and the correction of any insufficiency that may be present. They contend that if required, then prosthetic devices of various kinds including total valve replacement may be employed. They contend further that the immediate post-operative results are better as far as both clinical and hemodynamic findings are concerned. It must be admitted, however, that long term results are not yet available in sufficiently large numbers to have any significance.

The arguments of the advocates of open heart surgery for mitral stenosis do have obvious appeal. However, Ellis and Harken who are experienced in various techniques of mitral surgery believe it may be more difficult to assess mitral incompetence, either that occurring before surgery or that produced by surgery unless the heart is turgid and functioning. There are also the more late complications that follow open heart surgery particularly if a prosthetic device has been inserted, than have taken place after closed mitral valvuloplasty. The two major complications of this type are late embolization and late infection particularly bacterial endocarditis, neither of which are encountered to any degree after closed mitral valvuloplasty.

At the present time the patients with stiff highly calcified or immobile leaflets often with a significant degree of incompetence are the ones in whom repair by any technique including open heart surgery, is most difficult unless one undertakes a complete valve replacement. Experience with total valve replacement, however, is too short to allow any conclusions to be drawn but the operative mortality in these patients is rapidly falling and post-operative complications are being controlled sufficiently well so that increasingly surgeons are using total replacement with a simplified caged-ball valve in valve calcification and insufficiency.

Granted that proportionately more patients with rigid and calcified valves or with associated mitral insufficiency require open heart operations, there is still a group of favorable cases for the closed approach that can be carried out with a low operative mortality and with the expectation that a complete and deliberate procedure can be accomplished by the use of the ivalon tunnel sewn to the atrium with the assistance when necessary of the transventricular dilator. A 4 year follow-up study of such patients indicate that the proportion of improved patients is only slightly less than that at the same follow-up period in the entire series after an initial operation.

One actively discussed issue by cardiac surgeons is how good artificial mitral valve replacements really are. The application of the Starr-Edwards valve however is wide, as witness the fascinating report of a successful valve replacement in a ten month old infant with congenital mitral stenosis by Young and Robinson.[2] Nevertheless the results of Ellis and Harken's study warrants the conclusion that the low operative mortality together with the sustained good results of those patients without significant valvular insufficiency or calcification as well as the longevity of these patients that is not far from the normal life expectancy as a group, make closed valvuloplasty still the operation of choice in the hands of surgeons adequately experienced in this technique.

Inevitably there will be a residual group in which before operation there is no clear indication for either open valvuloplasty or complete caged-ball replacement or valvuloplasty by the closed method in the hands of a competent surgical group. Here Ellis and Harken point out that responsible surgical supervision embraces beginning with closed valvuloplasty but nevertheless having immediately available pump oxygenator equipment on a stand-by basis.

It was Elliot Cutler who first operated upon mitral stenosis in 1923 without success. In 1925 Soutar first successfully opened a mitral valve by digital fracture. In 1964 we have a report of 1571 cases over a twelve year period successfully operated upon. Things have come a long way, and we have reason to hope that the acceleration of improvement in cardiac surgery will continue.

L.H.N.

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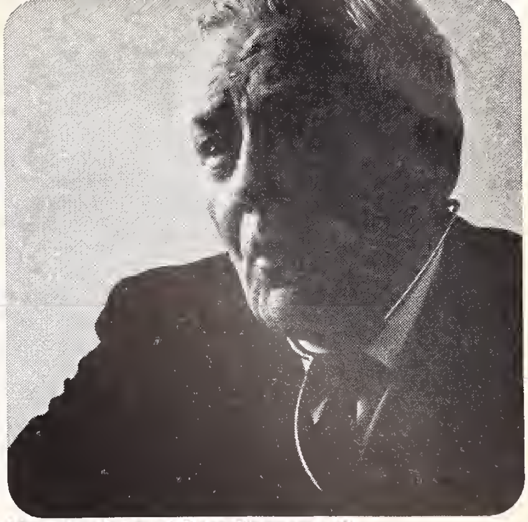
Peptic Ulcer Today

Physiologically, peptic ulcer represents the failure of localized areas of gastro-duodenal mucosa to withstand the destructive effects of acid and pepsin in the gastric contents. It appears as if hydrochloric acid is essential to the development of all chronic benign ulcers from the esophagus to the jejunum,

ɔing better, Mrs. Smith?

My, yes! I'm not tired out anymore.



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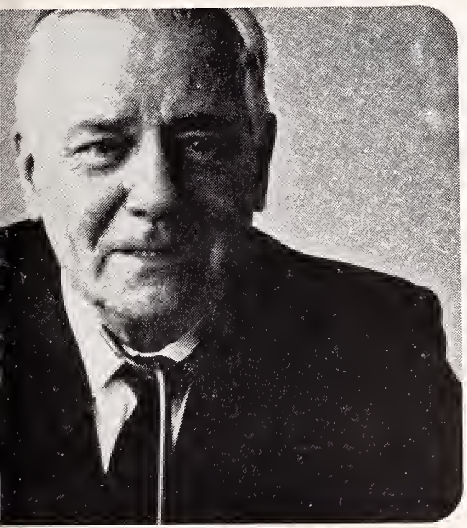

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For full details, see the complete prescribing information.

Availability: Bottles of 100 and 1000 tablets.
Average Dosage: One tablet daily with breakfast.

*Chupkovich, V.; Finnerty, F. A., Jr., and Kakaviatos, N.: The value of chlorthalidone plus reserpine in moderately severe and severe hypertension: A two year study. Presented at the 7th Inter-American Congress of Cardiology, Montreal, June 14–19, 1964.

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whether drug induced, psychogenically influenced or endocrine related. It follows the over-activity of those agents capable of stimulating gastric secretion or lessened activity of those substances that inhibit gastric secretion may play a significant role in ulcerogenesis.

In a recent symposium on peptic ulcer many of the ideas and concepts with regard to this common disease are considered authoritatively by a number of scientists. Dr. David State[1] points out that three hormones are known to produce increased acid gastric secretion. One of these is gastrin which will produce copious acid secretion even in a denervated pouch. This gastrin mechanism is present in man and it is inhibited by acid whereas vagal stimulation increases it. The fine balance between gastrin and acid prevents excessive acid secretion and stands guard against hyperacidity. In one disease the Zollinger-Ellison syndrome there is an enormous increase in gastric acid secretion with frequent severe ulceration caused by a benign or malignant neoplasm of the islet cells of the pancreas. The physiology of this disease is in strong support of the relationship between peptic ulcer and hypersecretion of acid.

Dr. State pointed out further that insulin can cause hypersecretion of acid by causing hypoglycemia which directly stimulates the vagal nerve action upon secretion in the stomach. He analyzes histamine which also has a potent effect on gastric acid secretion and explains the high incidence of peptic ulceration and bleeding in liver disease, because it is in high concentration in the gut, is not destroyed in a diseased liver and causes large amounts of gastric acid secretion. There are other hormones like secretin and enterogastrone arising in the gastro-intestinal tract which have the capacity to inhibit gastric acid secretion by preventing the release of gastrin.

Dr. E. L. Foltz[2] presented the nervous pathways whereby cortical structures of the brain lead to hypersecretion of acid in stomach, especially now that peptic ulceration is looked on by the medical profession as a psychobiologic disease. Presumably these cortical processes are concerned with emotional factors, frustrations, and other mental experiences that produce stresses, dissatisfactions and unrest that express themselves through the autonomic nervous system by vagal stimulation of hypersecretion of acid causing peptic ulceration. Recent experimental methodologies have developed sufficiently to reveal that mental stress operating through the anterior hypothalamus stimulate vagal nerves to cause quantities of hydrochloric acid secretion in the stomach within ½ hour. Physical stresses can also lead to increased gastric secretion through complicated humoral sources involving the posterior hypothalamus.

J. L. A. Roth[3] presented a clear picture of how drugs may participate in the pathogenesis of gastroduodenal ulceration in various ways. Some like cincophen, aspirin and phenylbutazone cause localized damage to the mucosa making it more vulnerable to acid and pepsin. Others like histamine, caffeine, and reserpine lead to excessive stimulation of gastric secretion and tend to aggravate a peptic ulcer diathesis. Then he points out that cortical steroids interfere in the reparative processes and result in delay in healing. This is true also of 5-fluorourecil. He emphasizes that prolonged contact of excessive amounts of hydrochloric acid with vulnerable areas of gastrointestinal mucosa is the predominant mechanism through which ulceration is produced by histamine, reserpine and caffeine. Caffeine especially is a potent and prolonged stimulant of hydrochloric acid in the duodenal ulcer patient and it also potentiates the free acid response to all other stimuli.

J. B. Kirsner points out that effective treatment continues to revolve about the objective of adequate protection of the gastro-duodenal mucosa from the gastric juice. The objectives of treatment therefore are the relief of pain, healing of the ulcer and prevention of recurrences and complications. As regards diet he found no conclusive evidence that implicates course or seasoned foods in development of chronicity of peptic ulcer. What is equally striking is absence of enhanced healing of peptic ulcer during a soft diet and this is why he finds that ulcer diets are more liberal today. Some foods, however, are more irritating to individual ulcer patients and obviously these should be avoided.

Kirsner found little benefit from anti-secretory drugs although they may have some effect against fasting secretion. He is a strong believer in the role of an understanding physician. Ulcer patients have been characterized as busy, hard-working, ambitious, and sensitive, with a tendency to repress their emotional turmoil. An understanding physician can help the patient to remove a source of irritation, to encourage him to express his anger and frustration or resentment he may feel. He can guide the patient into pleasant recreational activities and this might be more helpful than drugs in the control of peptic ulcer. Finally a mild sedative to promote rest and sleep he considers very helpful.

The paper by Welch and Hedberg[6] on traditional gastric resections in 1963 emphasize the need of taking at least half the stomach and performing a vagotomy if recurrences are to be minimized. However, as Kirsner pointed out peptic ulcer is primarily a medical disease and only intractable hemorrhage, perforation or obstruction will require surgical intervention.

In considering the newer recent roentgenographic techniques, Campbell[5] believes that in the near future we may have application of cine methods as a result of improvement in fluoroscopic image intensification. With cine methods no spot films of conventional radiographs would be required. There would be shortening of total time and total radiation exposure. The entire filming procedure will be carried out by trained technicians and this will permit the Roentgenologist to spend his time, talents, and energy solely for purposes of diagnosis. Furthermore cine recordings permits analysis of dynamic motion which could improve differential diagnosis of lesions involving the bowel wall.

The final paper by Bernstein et al[7] on results of gastric freezing for peptic ulcer shows that even after 461 freezings in 365 patients, the method is difficult and is and should be under further evaluation. While the stomach is being frozen with freezing fluids being circulated through a balloon in the stomach, the rest of the body has to be warmed to avoid hypothemia. While there has been no mortality, 12 patients developed melena and 9 gastric ulcers. Only 69 per cent of 185 patients with chronic duodenal ulcers are asymptomatic without diet or medication, 23 per cent had to be redone. In stomal ulcers there were 2 failures in 38 patients and 11 required refreezing. Finally 8 per cent have had to come to surgery anyway with duodenal ulcers. It is obvious that gastric feezing must be considered an experimental procedure until such a time as it will be possible to determine its real place in the management of various manifestations of the peptic ulcer diathesis.

L.H.N.

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Problems Of Transplantation Of Organs

When Schwartz and Dameshek[1] reported the effect of 6-mercaptopurine on the production of antibodies against heterologous serum albumen in the New Zealand white rabbit, they set in motion a revolution in the rapidly evolving field of tissue transplantation because aside from technical problems the real obstacle in transplantation is the rejection of the transplant by immunologic defenses against foreign tissue. It was only weeks later that dogs at the Buxton-Brown Research Farm of the Royal College of Surgeons were under treatment by Calne with 6-mercaptopurine. Prolonged acceptancy of kidney transplants was soon reported and within eight months, the first patient carrying a kidney transplant was on 6-mercaptopurine. The ability to achieve immuno-suppression, naturally led to a search for new and better compounds and azathioprine was synthesized and there is little doubt that additional improvement in the chemistry of immuno-suppressive drugs will be forthcoming in the future.

Now that organ transplantation has become feasible, it is possible to recognize certain problems involved in this procedure and particularly kidney transplantation. The first deals with immuno-suppressive drug evaluation. Several drugs are now under intensive study. 6-mercaptopurine, azathioprene, azaserine, actinomycin and methotrexate. Clearly we now have a wide range of pharmacologic agents, with more to come, and it is fortunate that there is a readily available animal model for this work, because it appears that the dog with a kidney transplant after bilateral nephrectomy offers a reasonable reflection of what is expected in man. This animal has now been used in many thousands of instances and has made it possible for kidney transplantation to move to the clinic. However, it is a very expensive animal preparation as compared to employing mice. Each dog must be suitably selected, subjected to the proper immunization against kennel disease and given pre- and postoperative care in an almost totally aseptic environment.[2] This includes multiple transfusions, multiple drugs and antibiotics, biochemical study to follow the progress of the graft and the resistance of the host; all the care of a modern hospital lavished on each dog. To rely completely upon kidney transplants on dogs for carrying out drug evaluation each one requiring at least 20 animals is almost a prohibitive task. The work, however, is of great importance and needs much further support for the institutions engaged in it.[2]

It is obviously important to develop a simpler animal screen like the heterologous blood cell system in the mouse or injection of heterologous serum albumen in the rabbit as originally used by Schwartz and Dameshek. In both these models a small animal is presented with the antigenic stimulus of a component of blood from a different species. The immune response is very readily measured by radioactive tag on the antigens. In both models the response is suppressed by chemotherapy. Skin transplants have been a research model for much of the immunologic study of homotransplant

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* AMA Council on Foods and Nutrition: The Regulation of Dietary Fat, *JAMA* 181:411-423 (August 4, 1962).
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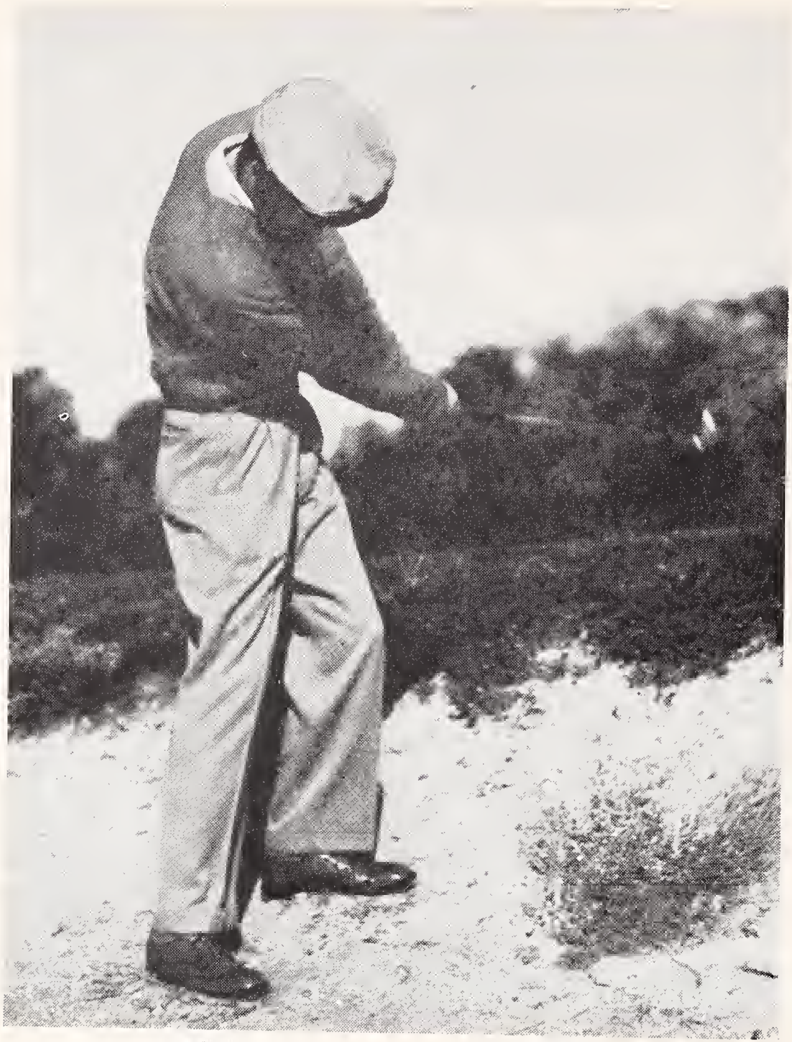

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rejection but they are too difficult to maintain by immuno-suppression.

Once a drug has shown its effectiveness in the laboratory as a means of diminishing antibody formation against transplanted tissue, then its clinical trial in man is made easier. The progress of the graft can be followed from day to day and even from hour to hour by standard chemical and radioisotope techniques. It is possible to titrate the action of the drug against the rejection potential of the patient. The result is that we are now in a stage of fruitful investigation and very rapid improvement in drug chemistry and clinical management.

The chief dilemma in transplantation today is the selection of donors. The living human donor provides the best tissue by far, though cadavers are under careful scrutiny. Donors who are closely related to the patient appear to yield the highest incidence of successful long term transplants. This means that a procedure is being adapted producing permanent injury in a healthy person in order to improve the well-being of another. It is not surprising that some laboratories have viewed this matter with misgivings and have resisted using tissues from volunteer human donors. Moore[2] is convinced, however, that with careful selection of donors, with evaluation of bilateral renal function, with vascular anatomy ascertained by aortograms and with proper precautions regarding blood group compatibility, he can offer the best results available and that it is better to do this than to dodge the donor problem by relying on cadaver kidney which is something less than second best. They are fortunate that thus far they have not lost a donor, but nevertheless one cannot deny the realities of present injury and future jeopardy.

The possible use of animals as tissue donors would provide another solution. Recent reports of a chimpanzee donor for a human patient shows that much thought is being given to heterotransplants between members of the primate order. However, although the exact role of immuno-suppressive therapy is recognized in homotransplants, whether it will also be effective in heterotransplants is not known. Until further study has been accomplished on the fate of heterotransplants between primates, the choice will remain between, the readily available living human donor and the rare cadaver.

The development of clinical transplantation in this country has reached its present stage largely as a result of activities in but a few laboratories which have been working in the field for almost two decades. In these institutions and in the hands of these doctors the many challenging facets of the problems are appreciated, because of the experience gained in managing such patients. They have contended with the care of patients with renal failure by multiple extracorporeal or peritoneal dialysis. They understand the problems of donor selection of vascular anastomosis, of preventing infection. They are skilled in identification and treatment of the post-operative immunologic rejection crises, the adjustment of the dose of immuno-suppressive drugs, with or without radiotherapy and splenectomy. In short in transplantation of the kidney four essential disciplines are involved: renal physiology, vascular anastomosis, urologic management and immuno-suppressive therapy.

It is clear that it is not enough to know how to care for a patient with renal failure and join blood vessels together with fine sutures in order to undertake transplantation. Although it looks deceptively easy it requires a four man team who should spend not days but months working together in the laboratory on this problem before undertaking this formidable task on a patient. We have the counterpart in open heart surgery. No one in his wildest dreams would undertake the extra-corporeal pump oxygenation and total body perfusion of a fully anesthetized patient with thoracotomy and cardiotomy of the left ventricle without carrying out an extensive series of experiments in the laboratory to assure his competence in such simple matters as the maintenance of proper circulation and normal blood chemistry.

In organ transplantation we have a new therapeutic device of remarkable effectiveness because of availability of chemical compounds that suppress the formation of antibodies. The chemistry is complex. The surgery is simple but let us not be blinded to the hazards. Up to this time 250 kidney transplants have been done throughout the world. But the principles apply equally to other tissues and organs as well. A method awaited for centuries is now at hand.

L.H.N.

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Research On Man

Recently much was made in the newspapers about an experiment on human subjects in whom cancer cells were injected to study the immune mechanisms present in normal humans against cancer cells. That such immunity exists is strongly suspected, for its destruction by chemotherapeutic agents is one of the complicating factors in studying cancer chemotherapy. Regardless of the species of animals in which natural immunity aganist cancer may exist, in the end, the studies must be extended to man, for we are all aware of the difficulties of translating physiologic or biochemical responses in one species, to other species and especially to man. One would suppose that the fact is obvious that to learn human responses, it is best to study man. When an investigator uses laboratory animals for research, no matter how good his studies may be he must conduct the study on man if he wishes to know whether the results apply to man.

To the investigator who is trained as a physician the ultimate experimental animal is man. He is concerned with human health and disease. While he is willing to learn from studies on laboratory animals, he must reserve judgment until he has established this applicability to man. Some studies to be sure can be performed only on laboratory animals. To determine for example the lethal dose of digitalis or any other drug, the studies can only be performed on lower animals. Obviously the freedom of the experimental design is limited in man, but whenever feasible the investigator sooner or later will choose man as his subject.

Those who work with laboratory animals frequently have no knowledge of the state of health of the experimental animal prior to the study. If an unexpected response occurs the investigator will have difficulty in deciding whether it is a normal physiologic response or whether there is something wrong with the state of health of his animal. In most instances the investigator who works with animals obtains his subject from the animal house and sees him for the first time minutes before he begins his studies. The animal is unknown. His health may be grossly abnormal. Rarely are simple studies made to determine the state of health in the animal before they are used for the experiment.

Early observations can rarely be recognized in an animal. In a human being any change, a simple expression or movement, a slight change in color, or even a sigh is quickly perceived and interpreted by the observer. Who can tell the early signs of distress in a dog? Must one wait for cyanosis of the tongue to decide when respiratory difficulty develops? Surely it must be earlier than this end-point but how can one detect it in an anesthetized dog? Obviously when the same studies can be conducted safely on man, what advantage can there be for the clinical investigator to spend a great deal of time and effort using expensive equipment in studies on laboratory animals especially since he works under the disadvantage of a limited knowledge of the health of the experimental animal.

If the investigator is interested in the diseases of man, he must study man. Many diseases of man are limited to man and can be studied only in him. Almost all human diseases were first discovered in man, for example arteriosclerosis, schizophrenia, hypertension, nephritis, congestive heart failure, diabetes, gout. Only after this discovery was it sought to produce them in other animals for study. As Burch and DePasquale[1] point out, were it not for the discoveries and observations in man investigations in many laboratories would not now be in progress.

There are many advantages to research on human beings. The subject is awake and responsive throughout the study. He can participate and report his experiences during the experiment. No anesthetic intervenes to mask or alter the response. The conscious human subject also provides a continuous stimulus to the investigator to be accurate, careful. The investigator who studies man must have a high degree of responsibility and confidence in what he is doing. In man there is little tendency to administer excessive doses of a drug. They are kept constant from one subject to another. No effort is made to seek a response with large physiologically unsound dosages of an experimental drug and negative results are accepted as such.

When an unexpected response is obtained in a human being the investigator is in an enviable position of knowing his subject and is better prepared to understand the response. Always he has provided himself with a careful, meticulous, and intimate history of the person's state of health. He has performed a careful physical examination, deriving trustworthy results. He can employ standardized laboratory procedures to evaluate further the subjects state of health. Another advantage of research on human beings is the ease with which long-term studies can be performed. The experimental procedures can be repeated over a period of months or years and the results correlated with the subjects health.

There are also many intangible advantages in studying man. The investigator gains possession of many supporting observations such as skin color, facial expression, depth and evenness of respiration, pulsation of blood vessels, venous distention, presence or absence of sweating, neuromotor activity, precordial movement, mental state of the subject, nature of his speech, abnormal sensations arising in the gastro-intestinal tract and urinary bladder, behavior, and many others. These are constantly observed throughout our experimental procedure in order to obtain information which cannot always be quantitated by measuring devices. Through rapport between the subject and investigator any change, a simple expression or movement, a slight change in color is quickly perceived and interpreted by the investigator. The empathy which naturally exists between men enables the investigator to de-

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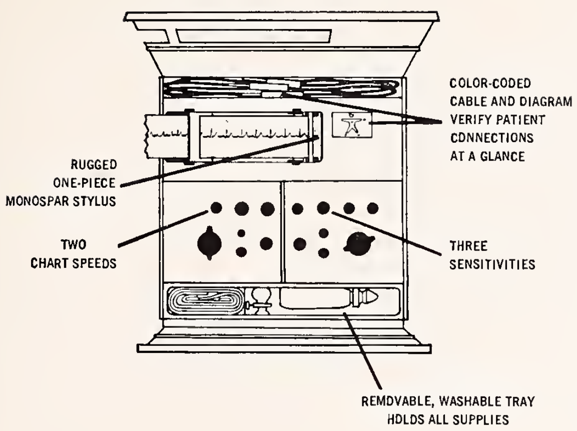
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tect a change in his subject almost before it is reflected by a galvanometer or a change in blood pressure.

Research on man is of the utmost importance including even the description of new diseases by the practicing physician. It is false to believe that good research cannot be performed on man. Such an idea reflects a lack of knowledge of the virtues and problems of research on human beings. The truth is that research conducted on man is interesting, satisfying, and fruitful. Were it not for observations on normal and diseased man, much medical research on animals would not exist today.

Even in the absence of formal experimentation, every doctor who gives a drug, prescribes a procedure or diet for his patient is engaged in an experiment for he observes the result, modifies the dose or procedure as needed, each patient being a unique individual, whose responses will vary from every other patient. Not less research but more research is needed on the most important of all animals—man.

L.H.N.

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Barriers To The Formation Of Rapport

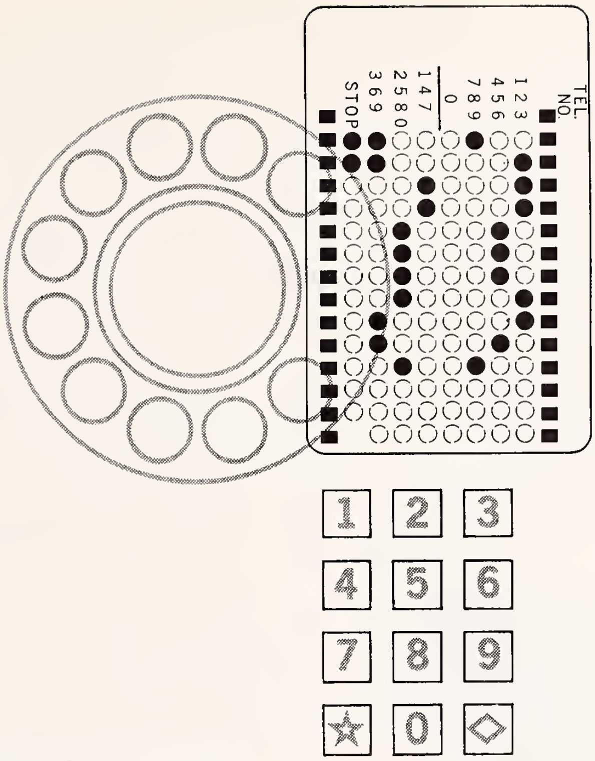
There are several elements which interfere with the formation of rapport. One is hostile feelings on the part of the patient. Especially in the early stages of history taking can hostility be a complete barrier to rapport. Whenever it creeps in, rapport cannot develop. This happens particularly in neurotic patients but also in so-called normal ones if the hostility is due to transference mechanisms in which the patient has displaced to the physician hostile feelings he really feels or has felt for some other person. These feelings may arise from a number of different causes. The patient may resent our suggestion that some of his somatic symptoms may have an emotional origin. A patient who is brought by a relative against his wishes usually feels hostile. Something about the physician may remind him of someone he dislikes. Unconsciously he may identify his physician with a father for whom he may have hostile feelings.

In psychotherapy it is sometimes helpful to allow hostile feelings to develop, overflow, and subside, or to analyze them for the patient, but this does not apply to our patient in the short-term of an office visit. Here it is better to avoid the arousal of hostile feelings especially in the early stages. And so in our initial approach to a hostile patient we must exhibit such a degree of open friendliness and sincerity so that we succeed in disarming any degree of open hostility.

One common cause of hostility in the patient is hostility in the physician. Let's face it, we do suffer from it occasionally and if we are aware of it we may take precautions to cover it, but this does not fool the patient. He senses it from the nuances of our behavior. This type of hostility in the physician may have good reasons in reality, such as pressure to see a patient when we are overbooked. Or it may be a reaction to the patient's demands for drugs or special privileges. Or it may be due to deep-seated psychological reactions such as those which occur when the patient's conflict activates similar unresolved conflicts in ourselves. After all we are human too and subject to the same laws governing our mental life as that of other humans.

However, it may also be that the physician is insecure, which is covered by anxiety. No one can have faith in an insecure doctor. This is a powerful barrier against formation of rapport. People doubt that a physician who cannot master his own anxiety can help someone else with his. This is especially a problem in the young physician, who must aim to attain a better psychological integration. It is not necessary to betray anxiety by a hurried interview or by talking a little too quickly. Calm, secure, leisurely approach will be interpreted by the patient as signifying an absence of anxiety. A young physician often betrays his anxiety by over-compensation. Obvious attempts at being sure of oneself, or a forced imperturbability, are inconsistent with other elements of the physician's behavior, and will be quickly recognized by the patient, and is liable to ring hollow. A most common way in which the young physician discloses his anxiety is in his tendency to reassure the patient too much, but really, is this not an unconscious attempt at reassuring himself rather than the patient.

As distinct from his insecurity and anxiety, the physician's personality itself may be a barrier to rapport. Physicians who lack feeling or are unable for a variety of reasons of exhibiting it are quickly recognized by the sensitive patient. If a doctor is himself rather withdrawn he will find it difficult to give the open friendliness that makes the easy formation of rapport. However, some do achieve it although more slowly and they often attain a rapport characterized by great depth of feeling. Often a physician starts to form rapport very easily but as the patient comes to understand him better rapport fades. Such a situation always merits close examination. Has the doctor failed in trust, understanding, in communicating sincerity, or in frankness and truthfulness. He should closely examine himself. He will find some defect in these which has led rapport to vanish.



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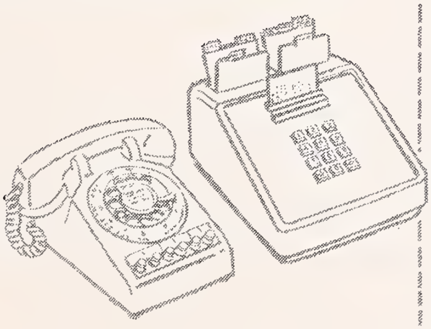

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One barrier to rapport is lack of motivation by the patient to get well. Usually of course the patient wants to get well, but not always. Not the pathological malingerers, not the cases in which an insurance compensation decision is pending, not the hysterics whose symptoms bring them secondary gain or the psychopath with an ego too weak to want to change their way of life. Of course distress such as anxiety or pain is an important symptom as regards motivation. In the hysteric the symptom causes little or no distress, in them the resistance to improvement and change is the greatest of all. This type of patient especially defends himself against rapport. Likewise does the patient who habitually avoids emotional relationship with others, unconsciously tries to prevent himself from forming a rapport with his physician. These can easily be recognized because they keep the discussion on an intellectual level avoiding any emotional participation.

Finally there are social and cultural barriers to rapport that we must recognize. It is hard to form rapport with a physician if the patient knows that the physician's basic values in life are at variance with his own. For example, a physician who is an atheist or openly derides religion, will have difficulty to form rapport with a devoutly religious person. Or if a physician is thought to be wealthy and looks on poverty as a sign of incompetence will have difficulty in rapport with a patient who has had a great struggle with poverty. The patient will feel isolated from the physician and feel "he cannot possibly understand what I have been through." Through empathy we however do know how the patient feels. We communicate this understanding by appropriate behavior and the barrier between the patient and doctor tends to disappear.

L.H.N.

Blood Pressure And Life Expectancy

A good way of looking at any condition is to think of its effect not only on morbidity but also on mortality. Some findings by a physician in his clinical study of a patient may be abnormal and yet its effect on longevity may not be clear. For example, a smoker when examined may show nothing abnormal in lungs, heart or elsewhere and yet we know that his life expectancy will be shortened by eight years if he smokes 20 cigarettes a day or 16 years if he smokes 40 cigarettes a day. Another example is blood pressure, we know that as blood pressure rises so does mortality. But what happens if the blood pressure is only moderately elevated above normal. Does this make any difference in his life expectancy. We cannot learn the answer from clinical studies because these usually do not follow up the effect of slight deviations on longevity.

We are thus face to face with the problem of defining levels of blood pressure which are in themselves significant. Fortunately since 1920 blood pressure determinations have become a routine part of physical examinations and was widely required for examinations for life insurance. There are now millions of cases available for statistical analyses. The largest statistical study ever undertaken on data related to health is the Build and Blood Pressure study of 1959[1] which analyzed data on almost four million insurance policies covering the period 1935-1954. Some important aspects of that study in relation to blood pressure were the determinations of average blood pressures and the effect on mortality of increased blood pressure and of combinations of blood pressure and certain impairments (e.g. slight overweight, albuminuria, family history of cardiovascular disease.)

The first question to be answered was what can be considered "normal." For years there has been a myth that blood pressure normally increased with age. There has been therefore wide variations in levels considered normal and it was time to determine what normal really is. Physicians are prone to think of normality as absence of definite signs and symptoms of disease. Nevertheless they will often consider as significant preclinical conditions such as overweight and elevated blood pressure since these conditions are known to be associated with increased mortality. What we really wish to know is what blood pressure levels can be considered to be associated with normal life expectancy.

This brings us to the question of averages. But if we think in terms of averages we will often be disappointed because averages are not necessarily normal. For example, life insurance studies on weight indicate that in general weight 15-20 lbs. below the averages are associated with the most favorable life expectancy (lowest mortality). This is similarly true for blood pressure. Systolic arterial pressures which are 10-15 mm. hg. below average and a correspondingly lower diastolic pressure are those associated with the greatest life expectancy. Nevertheless an important outcome of the '59 study was the determination of average blood pressures and the effect on mortality of increased blood pressure.

The Build and Blood pressure study indicate that the average systolic pressures of men increase from 117 in the teens to 132 in the early sixties. The average diastolic pressures vary from 71 to 80 in the early sixties. Women, however, have on the average pressures which are slightly lower than those of men, below 40, about the same as those of men in the 40's, and slightly higher than those of men at ages over 50. It is clear how woefully inaccurate is the traditional rule of 100 plus your age.

The average systolic and diastolic pressures found in the 1959 study are slightly lower than those found in the first large scale study of blood pressures in 1925[2] and are not markedly different from averages found in large industrial populations[3] and World War II selectees.[4] The slightly lower average in insurance studies of course do not include those individuals with elevated blood pressures since they were not issued insurance. But aside from the slight variation, the broad spectrum of society represented by holders of insurance policies provides a greater cross section of the population of the United States and Canada, than that found in any other large scale study of blood pressure.

The results of the 1959 study indicates that read ings of 132/90 and 143/85 at ages under forty would be associated with a definite increased mortality over the average mortality for that group. Similarly readings of 138/90 and 144/85 at ages over 40 would be associated with a mortality greater than the average for that age group. The decrease in normal life expectancy averages about 10 per cent. It is less than 10 per cent below age 35 but increasingly greater at older ages. For example, at age 20 life expectancy is reduced from 55.5 to 51.4 years or 7½ per cent. At age 35 life expectancy is reduced from 47 to 41 or 10 per cent. At age 60 life expectancy is reduced from 20 to 17 years or by 15 per cent. At any age from 20-70 as the systolic pressure approaches 140 or the diastolic pressure reaches 90 mm. Hg. mortality increases and the individual faces the possibility of significantly reduced life expectancy. Even when allowance is made for woman's natural advantage over men in life expectancy, the mortality associated with elevated blood pressure in women is generally lower than that in men. However, this does not hold true below age 40. Since younger women do not on the average appear to handle elevated blood pressure better than men.[5]

Benford[8] has analyzed the reliability of blood pressure reading found in life insurance examinations. He points out, however, that criticisms of unreliability are unwarranted since the average blood pressures in the mortality studies compare favorably with average blood pressures found in other large scale studies. Furthermore he himself had the opportunity to compare average blood pressures taken in 1000 consecutive insurance applicants by specially selected internists with the average blood pressure found in the Build and Blood pressure study of 1959. He found the distribution of the readings and the averages obtained were almost identical in the two groups. This constitutes strong evidence that blood pressures found in life insurance examinations are reliable for statistical purposes.

Mortality studies of this type are important to insurance companies in establishing standards for evaluation insurance risks. But they are of value to the physician by indicating danger areas. They indicate when the physician should be watchful, since they emphasize the threat to longevity of the minor departure from the averages. We must think of the effect of minor deviations from the average in a "good health" patient on his longevity: to what extent will it shorten his life.

We must bear in mind that insurance studies of blood pressure of the type mentioned do not measure morbidity, that is how much sooner would a person become ill as a result of the deviation of blood pressure from the averages. They are purely statistical and of course do not take into account underlying disease processes. For this reason the practicing physician must certainly evaluate his patient by an appraisal of the total situation, his home, his work, his calorie intake. He may in exercising medical judgment disregard slight elevations of blood pressure in individual cases. Nevertheless he should bear in mind that even slightly elevated blood pressure has an adverse effect on longevity in the long run if it persists.[7]

This knowledge should alert him to look for underlying arteriosclerosis, renal disease and other disease states which are known to produce hypertension and which may be amenable to treatment. Certainly efforts should be directed to reduce the blood pressure, like diet, salt restriction and antihypertensive drugs even though their effect on mortality still remains to be demonstrated. The indications are, however, that they do have a favorable effect on morbidity associated with hypertensive disease. One potential danger which the physician frequently finds associated with slightly elevated blood pressure is overweight. For the patient who shows this combination the doctor should prescribe a program of weight reduction and control. This will offer the patient a more favorable life expectancy.

L.H.N.

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Science Tools:

15. The Cineangiocardiogram

New advances in cardiovascular diagnosis are being reported with increasing frequency. The reason is that there are new techniques for studying the heart and as in the past, new techniques bring new understanding by the bedside. It is true that for centuries physicians have tried to correlate the findings during life with the findings of autopsy and this approach to learning was the only approach until the beginning of the twentieth century. During the last fifty years, however, new tools have been developed which makes possible explanations of physical signs during life and we no longer have to wait for the autopsy to clarify the scientific basis of physical signs.

The Polygraph of Sir James MacKenzie allowed him to interpret more accurately the observations he made on his patients. The electrocardiogram became a masterful teacher of cardiology at the bedside. To learn arrhythmias, the electrocardiogram is the best teacher. Radiology correlated with autopsy findings in the true Oslerian fashion. But then came angiography which permitted correlations of cardiac findings during life. With phonocardiography the study of heart sounds and murmurs was greatly enlarged and to learn cardiac auscultation, phonocardiography was the best teacher. In fact, auscultation was revolutionalized during the 1950's simply because the phonocardiogram could be correlated with other physiologic mechanisms.

When Forssman successfully catheterized his own right atrium, we were shown a way of studying the dynamic events within the heart and great vessels. By this technique all types of data can be obtained; pressures, flows, electrical activity, and sound. It was a great advance over the previous method of inserting cannulae into the heart chambers to obtain pressure pulses, a method beautifully employed by Carl Wiggers, but inapplicable in human subjects. The technique of catheterization of the heart chambers led to the discovery of many new cardiovascular findings and helped to clarify the meaning of many old physical signs. As a result the physical diagnostician is reading of new advances in cardiovascular diagnosis with increasing frequency. We have entered the Golden Era of cardiovascular physical diagnosis because we realize now that physical diagnosis has a deep scientific basis.

The contraction and relaxation of cardiac muscle causes movement of the blood within the heart alterations of the shape of the heart and movement of the heart within the chest, which are the bases of physical signs. Cardiac catheterization provides information about the pressures within the heart, and measurements of cardiac output. The technique is not completely satisfactory for the study of the production of physical signs, for it does not permit continuous measurements of flow from chamber to chamber within the heart, nor the volume and the exterior shape and position of the heart, all of which are so vital for the understanding of physical signs as obtained by inspection, palpation, percussion, and auscultation.

By cineangiocardiograms, the scientific basis of physical signs is made clear. A cineangiocardiogram is obtained by using the standard technique of right heart catheterization and retrograde femoral and transseptal technique for left heart catheterization. An eight inch image amplifier equipped with a television system and a 35mm motion picture camera is employed. A radiopaque material is injected and cineangiocardiograms are obtained at sixty frames per second. In this way enough information about the movements of the heart during the cardiac cycle can be obtained to be of value in the study of the origin of physical signs. Simultaneous recording of pressure and sound was made possible by a signal generated by the R wave of the electrocardiogram which made a simultaneous mark on the pressure record and the motion picture film. Thus one can observe directly the onset of flow into a chamber or great vessel, the opening and closing of valves which are timed precisely by cineangiocardiography.

The clinician uses physical signs to draw inferences about the functional anatomy of the heart. This correlation is strengthened by the cineangiocardiogram. For example, the opening snap of the mitral valve can be recorded at a time when the front of the contrast material contained behind the mitral valve has reached the point of maximum descent into the ventricle. The meaning of the opening snap has been correctly inferred previously. Now it can actually be visualized. One can see the mitral valve as a sleeve, the wall of which is collapsed during ventricular systole and as the ventricular pressure falls, one can see the blood from the atrium moving down and separating the two walls of the sleeve. One can see that the normal valve in no way impedes the flow of blood into the ventricle. With atrial systole the mitral valve leaflets move toward closure. The mitral valve closure actually begins prior to the onset of ventricular systole in normal sinus rhythm. We have actually assumed this and taught this to our students, but with cineangiocardiography, we can actually see that our former inferences are true in fact.

The origin of the four major physical signs of mitral stenosis can be demonstrated by the cineangiocardiogram. One can see that the stenotic valve never opens completely, so that during diastole we find the visual explanation of the pressure gradient across the valve. During systole one can see abnormal thickness of the stenotic valve but its position is the same as in the normal. With onset of diastole one can see the radio opaque material moving down into the ventricle and its accelerated flow across the valve during actual systole. This, of course, corresponds to the presystolic accentuation of the diastolic murmur. Although atrial systole initiates closure of the mitral valve, the complete closure is never effected and the stenotic valve is still in the ventricle when it first contracts and is lifted up towards the atrium. This corresponds to the accentuation of the first sound. If mitral regurgitation is also present, one sees a jet beginning with early systole and continues throughout systole and this corresponds with the pansystolic murmur heard when regurgitation is present. If total regurgitation is present the contrast material may even reflux into the pulmonary veins as well as the left atrium during systole.

The aortic valve is also clearly visualized during systole and diastole and these events closely correlated with the first and second heart sounds. Ross and Criley[1] have studied congenital aortic stenosis, calcific aortic stenosis and regurgitation with cineangiocardiography. In regurgitation during diastole one can see that the left ventricle is being filled by two streams of blood which intersect at an acute angle and between these two streams lies the aortic leaflet of the mitral valve.

It is obvious that now when we make a careful physical examination of the heart, we can recognize the close interrelation of these findings with those frequently obtained in the laboratory. What one feels with hands and hears with stethoscope, gives us not merely an initial suspicion but very often a direct diagnosis. Now we can "listen in" or "zero in" on pertinent physical signs and understand the dynamics in the heart that gives rise to them.

L.H.N.

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Alcohol In Our Society

Last year about forty thousand people were killed on our highways in automobile accidents, and over one million were injured and there was untold economic losses. Most of the accidents included alcohol problems. This included pedestrians as well as drivers and passengers. These facts alone are evidence enough of how big a part alcohol plays in our society and it points up the tolerance which we have for its excessive use.

Alcohol is also the largest single item disrupting families in America. An estimated five to six million alcoholics involve at least twenty million people. To these families, alcohol represents a Sword of Damocles which hangs over their heads ready to drop on the slightest provocation. We learn this from family courts and other courts concerned with domestic relations in which a vast percentage of their cases have excessive drinking as one of the complications with which they must deal. In many cases of delinquency and juvenile crime, one or both parents of the culprits are often found to be alcoholic. The atmosphere created in a home where there is an alcoholic is such that it gives rise to unusual tensions, insecurities, discomforts and problems which make living that much more difficult for those reared in such an environment.

When the problems of living become extremely difficult, some people cannot face them and there is a tendency on the part of many of these people to follow the pattern which their parents took before them. If that pattern in the parent was excessive drinking, there is a great liklihood that the child will also seek the same method of escape. Most alcoholics in our society drink excessively in order to avoid the frustrations and difficulties of living, to escape the disagreeable problems of life.

All too often when the problem of alcoholism enters into a family and the patient afflicted with the illness does not respond to the expectations of the spouse, the non-alcoholic partner wants to be relieved of the responsibility of caring for or even tolerating the sick alcoholic. In this attitude the non-alcoholic spouse is reinforced by friends, relatives and well-meaning persons who do not recognize that the alcoholic is seriously ill, but rather that he has been derelict in his responsibilities and indulges himself only for his own pleasures. We do not pay enough attention to the contribution of the non-alcoholic spouse that might aid and abet and continue to contribute to the illness in the alcoholic victim.

People do not realize that alcoholism is a drug addiction and that this illness can be just as severe in its implications as the addiction to narcotics or barbiturates. The fact is that the alcoholic is not

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indulging himself. He rarely drinks for pleasure. In most cases, the alcoholic is a sick, miserable, unhappy person who seeks to medicate himself in order to get relief from suffering both emotional and physical which he finds intolerable. Through alcohol he finds the kind of release which helps to make his life more tolerable. But this leads to rejection by family and by society and forces the alcoholics to resort more and more to this drug in order to better bear their uncomfortable lives. In an effort to obtain oblivion, they continue to use the drug hoping that when they awake the discomfort which they experience and the factors which have contributed to their unhappiness will go away. But on awakening they are still there and the victims again resort to this drug to repeat the process, thereby experiencing repeated temporary escape.

The alcoholic is rarely recognized in the early stages of his illness since he so closely resembles what is considered a "heavy social drinker" or even an ordinary drinker. He continues drinking until the illness becomes far advanced and abstinence is much more difficult. Even in his own family tolerance for such drunken behavior continues for long periods of time before anyone, particularly the patient himself, recognizes that he has lost control and reached the end-point. The lesson is that early recognition and therefore the application of proper measures will save many such ill people from progressing to the more tragic stages of the illness. In all cases there is no equivocation with what is required. There is no tempering the answer. Total or complete abstinence is the only way to recovery. Cutting down, planning his drinking, exerting care in drinking all are of no avail. As with any addiction if he uses it at all he will use alcohol excessively. For the drinker the prospect of abstinence is a difficult one to face. However, his life and that of his family will often depend upon how he does face it.

From a health point of view, we must of course do all we can to help the recovery of those afflicted with the illness of alcoholism. But from a public health standpoint, to attain recovery of all the present generation of alcoholics would be of little avail if we do not prevent a future generation of alcoholics from taking place. In this regard parents have a great responsibility. They must control their own behavior so that children can benefit from their example. Children should be taught about the dangers of the drug, alcohol. They should be made to understand that the alcoholic is attempting to escape the disagreeable problems of life. Children should be taught that frustrations are to be expected, and that living means having problems, sometimes one after another.

One must not expect success all the time. There will be some failures and disappointments which must be met with confidence that the next attempt will be more successful. Often expecting too much of a child results in his inability to attain approval of parents and this may result in continuous frustrations which he will carry on to his adult life. Many with a low threshold for suffering will then resort to drinking in order to relieve this suffering. All of us must learn to meet the problems of living without running from them. Any form of escape, fantasy or alcohol, means entering a world of unreality. To resort to this type of escape avails us nothing, for it is only the real world which we have. To be sure, it is complex and troubled but to escape problems through alcohol results in a problem far more difficult than the one from which one wishes to escape.

There is do doubt that for those who use alcohol judiciously, it may be a pleasurable experience and add to other pleasures of life. But in excess it brings harm and tragedy involving entire members of a family. Proper recognition of its potential devolves around the parents. It is their responsibility to teach their children how to meet the problems of living in a realistic way, and the dangers and futility of any other method, particularly escape through alcohol, must be pointed out.

L.H.N.

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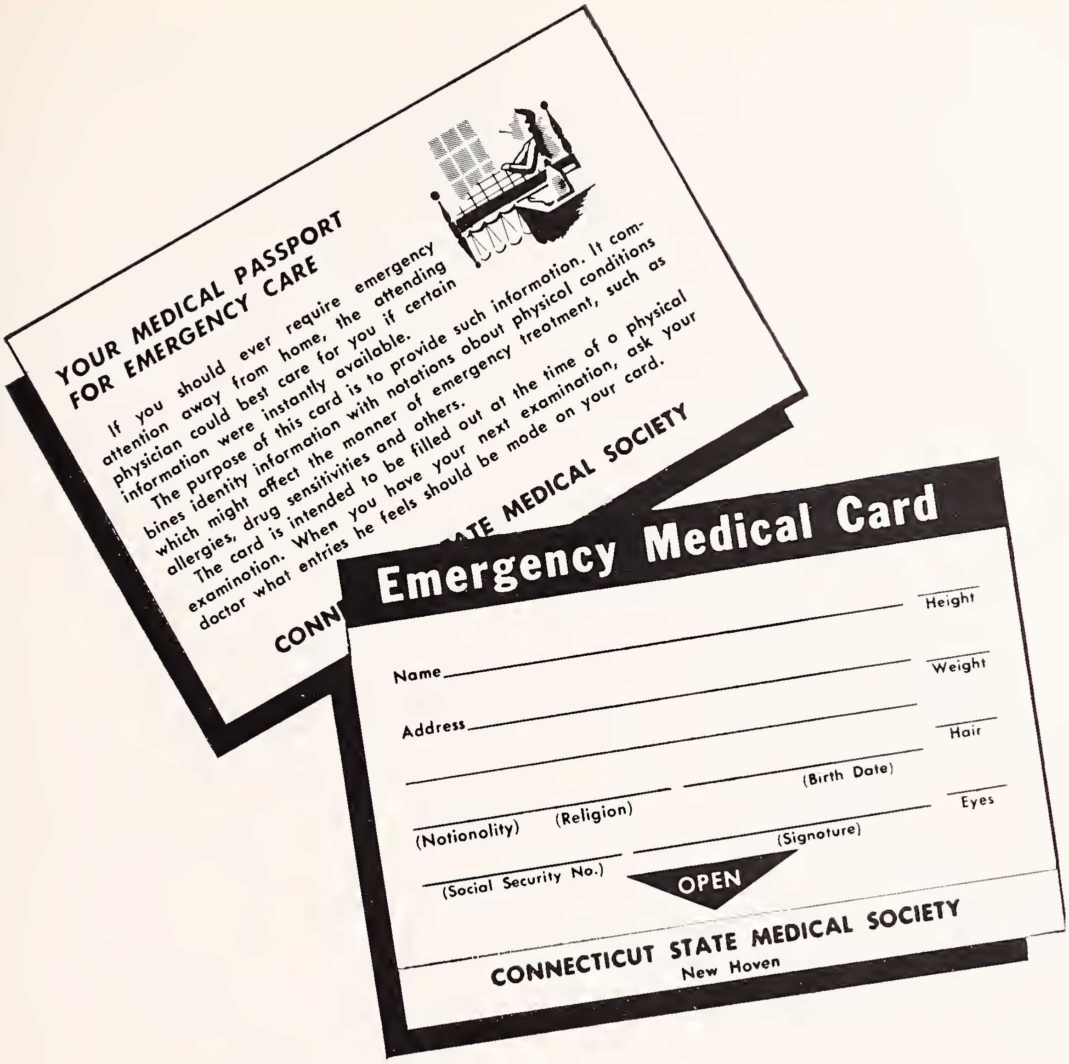
Block, M. A.: Alcohol a family problem, Bulletin of Am. Coll. of Physicians 5: 270, Sept.-Oct. 1964.

Health Problems Of Adolescents

Generally we think of the adolescent years as being a time of good health and this is true. Nevertheless, there is a significant morbidity and mortality during these years as is pointed up by a nationwide survey conducted by the United States Public Health Service in 1957 and 1958. From this we can get an insight into the frequency of illness and injury during childhood and adolescence. The survey shows that the highest incidence of acute conditions occurs between birth and the age of fourteen and decreases perceptibly in late adolescence and early adult life. It shows further that respiratory and infectious diseases during adolescence account for about eighty per cent of acute illnesses.

According to the 1960 census there are more than thirty-two million youngsters between the ages of ten and twenty years old in our country today. This span represents the physiological period of adolescence which in girls begins between eight and ten years and in boys between ten and twelve years. In biological terms adolescence ceases somewhere near



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the twentieth year of life. During this period the mortality rate in general is low. In 1955 as an example, approximately seventeen thousand adolescents died. Slightly more than half of these children died from accidents, mainly automobile accidents. As far as disease categories are concerned, the major ones in the mortality figures were cardiovascular diseases, neoplasms and renal disease.[1] It is very clear that if we are to have any significant reduction in the mortality rate during the adolescent years, it will have to come, and be concentrated on, the prevention of accidents. Here we have an opportunity to decrease the mortality rather sharply and effectively.[2]

Something of interest to parents is that during the past one hundred years there has been a steady and uninterrupted decrease in the age at the onset of the first menstrual period. It appears that for every ten years over the past century, the first menstrual period in the adolescent girl has occurred on the average of nine months earlier than during the pervious decade and this trend is continuing according to a survey in 1960. This means that the adolescent girl in biological terms is maturing earlier than the twelfth year, whereas one hundred years ago she was maturing or having her first menstrual period in the seventeenth year. This phenomenon has obvious cultural implications but it also has medical implications. One is in regards to dysmenorrhoea, and the other is in regards to adolescent pregnancy.

If dysmenorrhoea begins earlier in life this increases the number of years of disability unless it is promptly recognized and adequately treated. To be sure it is not a lethal disorder but it represents a symptom of varying disability which may or may not persist in adult life. About forty per cent of all girls have dysmenorrhoea to a significant degree.[1] It reaches its peak in the late adolescent years although the period of time varies with different girls. However by the senior year in high school the average girl has had a significant amount of painful menstruation—enough to have missed some school and to cause a visit to her own doctor. We are here dealing with approximately five million girls between the ages of ten and twenty years. With the appropriate approach to all the symptoms which are present in this particular disorder, considerable and rapid relief may be given to many girls. When dysmenorrhoea is part and parcel of a basic emotional disturbance, then those girls should be identified so that they can receive treatment early in life before the symptom has become fixed into a more adult personality disorder.

Another important subject is adolescent pregnancy. Heald[1] points out that in 1960 there were four and one-quarter million pregnancies in the United States and of these six hundred and sixty thousand occurred in girls under nineteen years of age. This is important because we know that pregnancy in the mother under age nineteen has a higher incidence of maternal complications. Furthermore, the incidence of prematurity with its inherent hazard to the infant is higher.

Another adolescent problem with which we are familiar but about which we do not know enough is obesity. We do not know the extent of obesity in the United States as far as children and adolescents are concerned. One study suggests that its general incidence is higher in girls than in boys. A conservative estimate would be that it occurs in the vicinity of ten per cent of boys and fifteen to twenty per cent of girls, or in round figures, in over one and one-half million boys and two to three million girls. It is clear what this may mean to the families who are faced with this problem. Many persons brush aside this problem because they think that as the child grows older he will lose his weight. The fact is that in many cases the opposite is true. Most of them remain obese as adults. It is becoming quite clear from recent data, that obese boys and girls will generally speaking become obese adults and that a major reservoir of obesity in adult life is obesity in children and adolescents. To us as physicians who are familiar with adult obesity and its contribution to premature morbidity and mortality, it means we have to learn much more about the cause of obesity, so that we will know how to treat it properly especially in its early stage during adolescence and before the obesity pattern has been set in adult life.

Heald points out that in the category of infectious disease, the most important infection in the adolescent is the venereal disease group of which there is quite a bit. It is a subject that requires more and more attention from public health services and the individual physician because the incidence of both gonorrhoea and syphilis is on the rise.

The problem of dental caries in childhood and adolescence is now receiving more and more attention. Its etiology as regards the character of the saliva is under careful scrutiny so is its relation to general nutrition. One problem in its prevention deals with fluoridation of our water supply. It is now clear that fluorine is a mineral nutrient which we must have to enable us to construct a dental enamel that is maximally resistant to decay. A few people will have less dental decay if they drastically reduce the intake of sugar. However, fluoridation currently offers the only effective means to reduce dental decay by up to sixty per cent. Stare[3] points out that the markedly beneficial results of fluoridation are permanent as long as one continues to receive fluoridated water. Furthermore, this benefit may prove to be helpful in the prevention of osteoporosis in older people, reduce the number of fractures, and promote stronger and quicker healing.

Last but not least are the emotional disorders present during adolescence. We do not know the extent of the preblem. If one takes the number of patients who are visiting psychiatric clinics in this country, it is quite clear that approximately one-third of all the patients receiving outpatient treatment are between the ages of ten and twenty years old.[1] Clearly the adolescent years are characterized by emotional turmoil. A significant number of these youngsters have difficulty coping with everyday living. They require professional help to bring them to adulthood without permanent damage to their emotional and rational maturity.

It is clear that there are significant health problems during adolescence even though the adolescent years are generally healthy. The problems must be identified and faced. Parents must face them. Physicians who are responsible for the care of these children must face them. By acknowledging their existence, we will have taken a long step towards their solution.

L.H.N.

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Drugs For Hypertensive Crises

There is a wide range of opinion as to what clinical features characterize an "acute hypertensive crisis," and what is the best teratment. In the absence of a clear-cut demarcation between severe or accelerated hypertension and acute hypertensive crisis, some clinicians consider a single diastolic reading of 150 mm. an indication for emergency reduction of blood pressure. Others use emergency treatment only if such pressures do not respond to sedation and reassurance, or are associated with signs and symptoms of recent injury to the brain, retina, kidneys or heart.

Acute hypertensive emergency occurs most commonly in acute nephritis, toxemia of pregnancy, the accelerated phase of essential hypertension, and pheochromocytoma. Hypertensive crises can also occur when a monoamine oxidase (MAO) inhibiting drug is taken at the same time as a sympathomimetic drug (such as ephedrine or the amphetamines), or with foods containing amines (such as some cheeses and meat extracts). Among the most important MAO inhibiting drugs are the antidepressants phenelzine (Nardil-Warner, Chilcott), isocarboxazid (Marplan—Roche), nialamide (Niamid—Pfizer) and tranylcypromine (Parnate—SKF), and the hypotensive drug pargyline (Eutonyl—Abbott).

HAZARDS OF PARENTERAL DRUGS—Many drugs are available for the emergency treatment of hypertensive crises, all requiring cautious use. With all parenterally administered drugs, blood pressure may drop suddenly and sharply, and rapidly progressing renal insufficiency may result from the reduction in renal blood flow.

In the treatment of hypertensive crises associated with toxemia of pregnancy, there is the additional problem of possible harmful effects of the drugs on the fetus. The use of thiazide diuretic drugs during the third trimester of pregnancy has been associated with development of hematological disorders in the newborn (J. D. Harley, et al., Brit. Med. J., 1:696, 1964; S. U. Rodriguez, et al., New Eng. J. Med., 270:881, 1964). It is not known whether any drug can reduce blood pressure in toxemia of pregnancy without the risk of injury to the fetus; therefore, it is best to assume that all antihypertensive drugs involve risk, especially during third trimester. The risk must, of course, be accepted in women who do not respond to salt restriction and sedation.

GANGLION-BLOCKING AND SYMPATHOLYTIC DRUGS—The consensus of Medical Letter consultants is that treatment of a hypertensive crisis should start with the intravenous use of the ganglion-blocker trimethaphan camsylate (Arfonad—Roche). The special advantage of this drug is that it acts rapidly and is also rapidly dissipated. Because patients differ greatly in their response to the same drug and require different dosages, the use of Arfonad (or any other parenteral hypotensive agent) requires careful monitoring of blood pressure. The dose of Arfonad varies from 25 to 100 mg. and is best administered in concentrations of 1 mg. per ml. of 5 per cent glucose solution at the rate of about 4 mg. per minute.

Pentolinium tartrate (Ansolysen—Wyeth) is a favorite of some clinicians. The effective dose of this ganglion-blocking drug also varies widely, and doses as small as 5 mg. have precipitated profound hypotension with renal shutdown. Methyldopa (Aldomet—Merck) is effective in some patients; its disadvantages are that the onset of action is slow and the hypotensive effect is somewhat unpredictable. The usual adult dose is 250 to 500 mg. intravenously at four- to six-hour intervals. Oral phentolamine hydrochloride (Regitine HCl—Ciba), 50 mg. every four to six hours, is the drug of choice for the prevention and control of marked blood pressure elevations in patients with pheochromocytoma until the tumor can be removed surgically.

RESERPINE—Some clinicians regard parenteral reserpine as the drug of first choice in hypertensive crises. The usual starting dose is 2.5 mg. intramuscularly, but as little as 1 mg. is sometimes used. The main disadvantage of reserpine is the great variability of its effect on blood pressure. Furthermore, reserpine has a prolonged action, and hypotension severe enough to require the use of vasopressors may occur even after the drug has been discontinued. Reserpine may be especially hazardous in patients with cerebrovascular disease. Doses as small as 0.1 mg. intramuscularly have caused excessive hypotensive effects in patients who have recently suffered strokes (S. C. Leonberg, Jr., et al., Ann. Intern. Med., 60:866, 1964).

HYDRALAZINE—Few clinicians favor the use of hydralazine (Apresoline—Ciba) in hypertensive crises. It is sometimes combined with reserpine, however, with appropriate reduction in the dose of each. The initial dose of hydralazine alone is 20 to 40 mg. intravenously or intramuscularly repeated every four to six hours. Parenteral hydralazine increases cardiac output and may precipitate or worsen congestive heart failure.

THE VERATRUM ALKALOIDS — Alkaloids derived from the Veratrum viride and Veratrum album plants have long been available for the treatment of hypertension. Among those sometimes used parenterally in hypertensive crises are cryptenamine acetate (Unitensen—Neisler) and protoveratrine A and B (Veralba—Pitman, Moore). They appear to act chiefly by peripheral vasodilatation. The most serious objection to their use is the narrow dosage gap separating antihypertensive from emetic effects. This is especially serious because a patient in crisis may be in a near comatose state, and the risk of aspirations is created by the emetic effects of Veratrum preparations. As with reserpine, their hypotensive effects are sometimes abrupt and unpredictable in onset and can be long lasting.

Both oral thiazides and parenteral mercurial diuretics enhance the hypotensive effects of all other hypotensive agents, but are not sufficiently effective alone in hypertensive crises. They should not be administered until there is evidence of effective renal functioning.

Reprinted from The Medical Letter on Drugs and Therapeutics, *New York, N.Y., Vol. 6, No. 25, December 4, 1964.*

Study Shows Suicide Rates Unaffected By Joblessness

Unemployment, at least in the past decade, has not been an important factor in the causation of suicide, a study indicated recently.

Suicide rates for the years 1954-1961 in 13 principal labor market areas of Pennsylvania were compared with unemployment rates in the same period.

In spite of wide differences between areas in average unemployment rates, there was no evidence of corresponding variation in suicide rates of either men or women, either for the ages 15 to 84 or for the more limited age range of 35 to 64.

The study was reported by Bonnie Walbran, B.A., and Brian MacMahon, M.D., Harvard University School of Public Health, Boston, and Albert E. Bailey, Ph.D., Department of Health, Commonwealth of Pennsylvania, Harrisburg, in the current Archives of Environmental Health, published by the American Medical Association.

In Altoona in 1958 unemployment was at one of its highest levels and the suicide rate for men aged 35 to 64 was at its lowest, the study revealed. Lancaster had its highest suicide rate in 1956 when the percentage of unemployed was at its lowest.

Between 1957 and 1958 the per cent of unemployed doubled, or almost doubled, in six of these areas. In two, the suicide rate increased, in three it decreased, and in one it stayed virtually constant.

Although previous studies have shown that the percentage of unemployed is much higher among persons committing suicide than among the related general population, the researchers said they were inclined to believe, on the basis of the Pennsylvania study, that the high proportion of unemployed among suicide victims results from a social or occupational "drift" associated with characteristics of the impending suicide syndrome.

Other studies also have shown a marked correlation existing between male suicide and unemployment rates during the past four decades. Regarding this the researchers commented:

"It may be that this correlation results from correlation of both variables with one or more of the many other social variables that fluctuate in response to economic circumstances.

"On the other hand, it may be that very marked fluctuations in employment rates, such as occurred during the 1930's and 1940's may indeed be causally associated with suicide in males, but that the type of fluctuation that has occurred more recently, being smaller in degree and buffered by improved social security arrangements, may not be associated with changes in suicide risk."

Wound Infection At The Massachusetts General Hospital Over The Years

Benjamin A. Barnes, M.D.

■ The incidence of post-operative incision infection in selected standardized operations at the Massachusetts General Hospital is found to vary with the type of operation, but *not* to vary over the years after any particular procedure. Typical rates of post-operative infection as established over a twenty year period are:

Appendectomy:

appendix not inflamed	1.7	per	cent
" inflamed	3.5	"	"
" gangrenous	15	"	"
" perforated	25	"	"
Inguinal herniorrhaphy	5.2	"	"
Abdominal hysterectomy	3.8	"	"

Although modest fluctuations in the incidence of infection after any particular procedure were apparent, these fluctuations were entirely within a range to be expected on the basis of chance alone. No significant trends were noted. It is concluded that the risk of post-operative incision infection is constant *for these operations,* doubtless a consequence of existing techniques of modern operating rooms which largely eliminate in consistent fashion the environmental bacteria as a common cause of infection.

If this last conclusion seems premature, consider the following evidence derived from the medical literature:

1. In operations requiring multiple incisions many instances are known where only one or two became infected.
2. The incidence of positive bacterial culture from clean surgical incisions is twenty to thirty times the incidence of infection in the post-operative period.
3. The number of bacteria found necessary to produce an abscess in volunteers when injected subcutaneously is in the order of 10^4 to 10^6 bacteria, a number far greater than is likely to sediment from the ambient air of the operating room.
4. Different types of operations have different incidences of post-operative infection.
5. Ultra-violet light, well established as a method for reducing bacterial counts in air, has no effect on the incidence of post-operative infection except in a select group of "extra-clean" operations.
6. Obesity, diabetes, and steriods are recognized clinical hazards for infection-free healing.
7. No convincing correlation of bacterial species between results of cultures of the personnel and environment on the one hand and the results of cultures of septic incisions on the other have been published.
8. Where colony counts of sedimenting bacteria have been monitored in operating rooms, no positive correlation has been demonstrated between such counts and the appearance of post-operative infection.
9. Phage typing of staphylococci isolated at operation from the incision does not correlate with the phage typing of staphylococci seen in post-operative infections.
10. Several studies have correlated the bacterial flora carried by the patient with that subsequently isolated from a septic incision.

Some tortured interpretation of the above evidence might permit an explanation of post-operative incision infection on the basis of environmental bacteria. Far simpler is to accept that in most instances environmental bacteria are, with present high standards, an unimportant variable compared to other contributing factors.

Bacteria are a necessary, but not a sufficient condition, for the development of sepsis. Their ubiquity always permits them to exploit faulty technique by the surgeon, subnormal resistance by the host, defective wound healing, bleeding diathesis, and so forth. These latter factors are perhaps the unique ingredients in the genesis of wound infection, and against these counter methods will be developed. New concepts will be evolved different from the Listerian tradition, yet extending its effectiveness. These concepts will lead to a significant reduction in post-operative incision infection rates.

Abstract of paper given by Dr. Benjamin A. Barnes at Wound Infection Forum, Hartford Hospital, October 16, 1964.

DR. BENJAMIN A. BARNES, Clinical Associate in Surgery, Harvard Medical School; Assistant Surgeon, Massachusetts General Hospital, Boston.

Infections At Hartford Hospital In General Surgery

(Comments On Paper Presented By Dr. Barnes)

Robert W. Painter, M.D.

■ I enjoyed Dr. Barnes' presentation very much. I think that he has demonstrated the importance of obtaining accurate statistics on hospital wound infections throughout the years. We felt that it was important to determine our incidence of wound infections at the Hartford Hospital; and under the guidance of the Wound Infection Committee, a system was set up so that accurate information could be obtained. Every chart at the time of discharge was reviewed by specially trained personnel in the Record Room and if any suggestion of wound infection was found, the chart was reviewed by a member of the Committee. The charts with evidence of wound infection were collected and reviewed at a regular monthly meeting. This information was then tabulated by I.B.M. machines and it was possible to determine more accurately our incidence of wound infection. We were primarily interested in clean—class I and clean contaminated—class II infections. The clean contaminated group included operations upon the intestinal, biliary, respiratory and urinary tracts.

This information was tabulated for general surgery as well as the surgical specialties for the past year—September, 1963, to September, 1964. As you can see from the first slide, our incidence of clean wound infections was 1.2 per cent in 4,312 cases. In general surgery we had an incidence of 1.1 per cent infections in 2,264 cases.

Slide #2—The infection rate in clean contaminated wounds was 2.7 per cent in 3,342 cases on all the surgical services. On general surgery we had an incidence of 4 per cent wound infections.

Slide #3—our combined infection rate of clean and clean contaminated cases on general surgery was 2.4 per cent in 4,078 cases. For general surgery and the surgical specialties, we had an incidence of 1.8 per cent infections in 7,654 cases studied.

It should be pointed out that these figures do include re-admissions to the hospital for wound infections, but do not include infections which may have occurred after the patient's discharge from the hospital.

The monthly incidence of wound infections has varied somewhat during the period studied, but no great change was noted at any time. We feel that we have now set up an accurate method of reporting wound infections at the Hartford Hospital and that no serious problem with infection exists at the present time. However, it will now be possible for us to determine any significant change in the infection rate so that if such an increase does occur, it will be possible for us to detect it accurately and do whatever is necessary to correct it.

Abstract of paper given by Dr. Robert W. Painter at Wound Infection Forum, Hartford Hospital, October 16, 1964.

DR. ROBERT W. PAINTER, Associate Staff in Surgery, Hartford Hospital, Hartford, Connecticut.

The Significance Of Time Between Injury And Treatment

John F. Burke, M.D.

■ Almost immediately following the discoveries of Pasteur and Koch, attention was called to the significance of time in the development of infection following wound contamination. Fredrich, in 1899, demonstrated that crushed wounds contaminated with bacteria uniformily became infected. If, however, the crushed tissue and bacteria were removed within the first six hours, only a few wounds became infected. This fundamental concept, illustrating a relationship between bacterial contamination, tissue injury, and time, has undergone considerable revision since the first days of aseptic surgery. The concept of wound excision was widely used in the first World War under the title of "Debridement."

Abstract of paper given by Dr. John F. Burke at Wound Infection Forum, Hartford Hospital, October 16, 1964.

DR. JOHN F. BURKE, Clinical Associate, Harvard Medical School; Assistant in Surgery, Massachusetts General Hospital, Boston.

It was again revised through the experience of the second war, and again modified following the introduction of antibacterial agents such as Penicillin. Howes, in 1946, demonstrated a significant increase in the length of time bacteria could reside in the wound without infection, through the use of an antibiotic. In the past few years, through the study of the biologic relationships between the host and the invading bacteria, further information has been brought to bear on this problem.

The relationship between contaminating bacteria, host defensive systems, and time, will be discussed with particular reference to (1) eschemia at the site of local contamination, (2) the complement fixation system, and (3) general systemic shock. The *decisive period of antibacterial action* will be described. This period will be contrasted with the *effective period of preventive antibiotics* and their significance in the evolution of early bacterial inflammation will be discussed. Illustration of the usefulness of this biologic data to clinical situations will be made.

Cellular Reactions To An Antigen

R. S. Speirs, Ph.D.

■ The response to antigenic material involves an outpouring of fluid and cells from the blood and tissues into a localized inflammatory area. The presence of antigenic material also initiates marked systemic reactions, which include hypersensitivity, immunity and even tolerance. At the present time there is no clear understanding as to how the presence of antigen can produce such diverse effects. We have tried to obtain information regarding these reactions by observing how cells actually react in the presence of antigen. A 30-minute movie was shown to demonstrate some of the activities common to inflammatory cells photographed in an *in vitro* situation. These activities include chemotaxis, phagocytosis, vesicle formation, rosette formation, and degeneration of hypersensitive cells.

Data was also presented from experiments in which animals were injected with radioactive antigen and then autopsied at various times to determine the location of radioactive material. (J. Immunology 90: 561-575 1963.) It was noted that neutrophils and eosinophils contained radioactivity for relatively short periods and eventually all the radioactivity was found in lymphocytes and cells belonging to the reticulo-endothelial system. These later cells appeared to function as "information carrying cells" and were capable of moving from one part of the body to another. They were found in relatively large numbers in the spleen and lymph nodes, and to a lesser extent in the bone marrow.

When the animals were reinjected with the same antigen, many of the "information carrying cells" appeared in the inflammatory exudate (J. Immunol. 92: 540-549 1964). When these cells contacted the antigen, they reacted violently and became highly swollen, vacuolated and disrupted. As this occurred, biologically active substances were released which attracted more cells into the inflammatory area. Many of the newly attracted cells were eosinophils which were specifically drawn towards the disrupted cells.

The second stage of the inflammatory reaction occurred when macrophages which are scavenger-like cells engulfed the fragments of the "information carrying cells" along with antigen, eosinophils and other cellular debris. Concomitantly, plasma cell formation and antibody production occurred.

A molecular concept of hypersensitivity and immunity was presented which indicated that lymphocytes, macrophages and plasma cells act as carriers for the messenger RNA and associated microsomes necessary for antibody production. It was suggested that antigen complexes with specific RNA in the inflammatory cells and that this complex persists causing the cells to become sensitized. When the cells are re-exposed to the antigen, a hypersensitive reaction occurs which attracts eosinophils and macrophages to the injured cell. The eosinophils appear to be involved in a transfer of antigen and RNA to the macrophages, which digest the antigen and reactivates the RNA, thereby initiating antibody synthesis. (Blood 22: 363-367 1963; Scientific American 210: 58-64 1964.)

Abstract of paper given by Dr. R. S. Speirs at Wound Infection Forum, Hartford Hospital, October 16, 1964.

DR. R. S. SPEIRS, Associate Professor of Anatomy, State University of New York, Downstate Medical Center, Brooklyn, New York.

Liquefaction Of Tissues In Infected Wounds

Edward L. Howes, M.D.

■ To understand the process of liquefaction will not only help to interpret the changes that are occurring in infected wounds, but also provide an approach to the prevention of infection and how to aid the evolution of the process already established.

When tissues lose blood supply because of wounding, the order of death is nerve, muscle, connective tissues, fat, and epithelial cells. Epithelial cells can be stored in a refrigerator for two days and still they grow. There is a mistaken idea that differentiated connective tissues do not die or die slowly. This mistake arises because death is difficult to recognize in connective tissues and the reaction of the living tissues to them is different.

Death is easy to recognize grossly in muscle and in epithelial cells, but it is difficult to recognize in fat and in the differentiated connective tissues. Even microscopically the only real discernible change is disappearance of blood vessels and cells between the bundles of collagen. Moreover while liquefaction occurs shortly after necrosis in most tissues, it does not take place in the differentiated connective tissues. Liquefaction takes place quickly in fat and in muscle—they simply melt away—but fascia, ligaments, tendon and bone remain unchanged. The liquefied end products of tissues are either absorbed or they pool together. On the other hand, those that do liquefy are encapsulated.

If an infection occurs, the bacteria grow in the pool. Indeed, they live easier here than in the surrounding living cells. Thus liquefaction, the end point of localization, helps localization. This reservoir of easy nutrition is lost, however, by spontaneous evacuation or drainage of the pool. Bacteria persists in the drainage until the drainage ceases. On the other hand when the dead tissue is not liquefied and is not encapsulated, it remains as a nidus for bacterial growth and a chronic infection is set up that continues, indeed, until slough separates. This slough is always the non-liquefiable tissues.

There is a difference chemically in the tissues that become liquefied—the tendons, the fascia, and bone are composed largely of collagen. Those that liquefy have various compositions: muscle, blood serum, and fibrin are composed of proteins; cell membranes, the arteries, and elastic tissue elsewhere are composed of lipoproteins; nerves and fats are composed of lipid and lipoproteins; and finally the epithelial cells contain nucleoproteins. The enzymes required to liquefy these as substrates must be variable:—they must be proteinases, elastases, the lipoproteinases, lipases and the nucleoproteinases. Collagenase is required to attack collagen, and there is no source of collagenase in the wound fluid unless it comes from bacteria.

All other enzymes originate within the body or from bacteria. The proteinases and or the cathepsins are produced by white blood cells as has been pointed out by Dr. Hirsch. The proteinases act at a neutral pH while the cathepsins act at an acid pH. Plasmin, a proteinase that attacks fibrin, exists in the globulin fraction of the serum. The lipoproteinases and lipases are found in a small amount of blood serum. Their sources are not known.

The lipoproteinases and the lipases are rather commonly elaborated by gram negative bacteria. Many gram negative bacteria produce proteinases and elastases. The collagenases are elaborated by the anaerobic bacteria. Certain strains produce more of the enzymes than others. Soil bacteria especially elaborate enzymes. This is the reason why only the carcass remains after an animal is buried in the ground. When bacteria that produce enzymes are present in the infected wound, unusual phenomena may be observed. There may be progressive skin or fat necrosis, or the destruction of catgut and the disruption of the wound. On the other hand if bacteria are present that do not produce special enzymes, only pus and the central liquefaction occurs.

Lastly the products of liquefaction produce important pathological and physiological responses. As the proteins for example are broken down to proteases, peptones and peptides, the last are known to trigger inflammatory changes. Leucotoxin, a peptide, attracts leucocytes locally and another peptide increases capillary permeability. Indeed, peptidases are present in wounded tissues to prevent the elaboration of too many peptides. Undoubtedly other breakdown products of tissues brought about by enzymatic digestion are physiologically active, but as yet have not been studied because the isolation of some of these enzymes is a recent development.

Abstract of paper given by Dr. E. L. Howes at Wound Infection Forum, Hartford Hospital, October 16, 1964.

DR. EDWARD L. HOWES, Director of Surgical Research, Hartford Hospital, Hartford.

Bacteriologic Flora Of Postoperative Infections

Balbina A. Johnson, A.B.

■ In 1925 the policy of an annual wound healing report was inaugurated at the Presbyterian Hospital in New York City. In that year the per cent of clean operative cases developing wound infections was 15 per cent. Emphasis on basic surgical principles and aseptic technics resulted in a reduction to 2.1 per cent by 1938. Following the introduction and intensive use of antibiotics and chemotherapeutic agents there was no sudden or significant increase of infections. In certain types of operations there has been a decrease. For instance, in inguinal herniorraphies the postoperative wound infection rate during the years 1952-1962 ranged between 1.1 and 0.6 per cent in contrast to the 2 per cent in the preantibiotic era.

The accumulated data from the preantibiotic era made it possible to assay the effect of the use of antibiotic and chemotherapeutic agents on the bacteriologic flora of severe or major postoperative infections in clean cases. Staphylococcus aureus was and still is the predominant pathogen isolated from such infections. There are, however, two significant differences: The incidence of group A beta hemolytic streptococci has markedly decreased and the coagulase-negative staphylococci have assumed importance as a cause of bacterial endocarditis following heart surgery.

During the five year period 1957-1961 coagulase-positive staphylococci were recovered from 70 to 85 per cent of the major infections and 85 to 90 percent of minor postoperative infections in clean cases. In 1962 and 1963 this percentage decreased markedly but the significance of this cannot be assayed at present.

In contaminated cases—at the Presbyterian Hospital no distinction is made between clean-contaminated and contaminated cases for statistical records—coagulase-positive staphylococci were recovered from 60 to 75 per cent of the major infections and 50 to 70 per cent of the minor infections. In the postoperative infections in contaminated cases the gram-negative bacilli play an important role. They were the only pathogens recovered from 25 to 50 per cent of the infections. In the majority of such infections more than one species of gram-negative bacillus was present.

The resistance of coagulase-positive staphylococci to penicillin G has depended upon the source of the strain. In 1963 strains isolated from hospitalized patients with colonization of the throat, bronchi or gastrointestinal tract showed the highest percentage of resistance—75 per cent. Fifty-five per cent of strains recovered from postoperative infections were judged resistant while only 38 per cent of strains from infections developing before admission of the patient to the hospital were resistant. The agar plate method with high concentration disks was used for sensitivity testing.

Resistance to chloramphenicol has remained low but shows the same pattern. Only six per cent of the staphylococcal strains from postoperative wounds were judged resistant in contrast to 28 per cent of those from colonization sites.

Approximately 50 per cent of the E. coli strains isolated from postoperative infections during the past two years have been streptomycin and/or tetracycline resistant. Resistance to chloramphenicol has been about 20 per cent. Klebsiella-Aerobacter has proven much more resistant. Proteus has shown only a low degree of resistance to streptomycin and chloramphenicol. All strains of Pseudomonas have been judged sensitive to colymycin.

Abstract of paper given by Miss Balbina A. Johnson at Wound Infection Forum, Hartford Hospital, October 16, 1964.

BALBINA A. JOHNSON, A.B., Assistant Director, Surgical Bacteriologic Laboratory, College of Physicians and Surgeons, Columbia University, New York, New York; Lecturer, Columbia University, New York, New York.

Discussion Of Paper Given By Miss Balbina Johnson

Raymond C. Bartlett, M.D.

■ Miss Johnson has clearly shown that the responsibility of the clinical microbiologist extends beyond the efficient and accurate isolation and reporting of pathogens. Laboratory workers must play a vital role in the clinical management of infection not only with individual patients but in the hospital as a whole. Tabulation of the changing incidence of etiologic agents and variation in antimicrobial susceptibility provides a most useful index to the commulative effects of antimicrobial therapy. The need for education of physicians in the effective utilization of the laboratory and in the correct clinical correlation of the data obtained is best exemplified by the persistence of demands for antimicrobial susceptibility data on organisms of doubtful relationship to the illness and upon which are often based vast and redundant chemotherapeutic efforts. The development of the relationship of the clinical microbiologist and the laboratory with the infection control committee introduces an objective and controlled approach to hospital epidemiology. More effective surveilance of individual patient management and epidemological problems has been accomplished by personnel specifically assigned to this task in some hospital laboratories including Miss Johnson's at Presbyterian Hospital. The cultivation of a thorough and active liaison between the clinicians and the laboratory worker continues to represent the most vital component in the effective control of infection.

Abstract of paper given by Dr. Raymond C. Bartlett at Wound Infection Forum, Hartford Hospital, October 16, 1964.

DR. RAYMOND C. BARTLETT, Clinical Assistant in Pathology, Hartford Hospital, Hartford, Connecticut.

Wound Infection Problems In Orthopedic Surgery

George B. Ambrose, M.D.

■ Reviews of post operative wound infection in orthopedic surgery at New York Orthopedic Hospital, Columbia-Presbyterian Medical Center, New York City, during the past 14 years have drawn our attention to factors peculiar to this surgical specialty which may interest those participating in this "Wound Infection Forum" today.

In a hospital where the incidence of post operative wound infection typically is 1 to 2 per cent for orthopedic surgery, including major and minor, primary and secondary, it was notable that certain procedures carried a substantially higher risk. As demonstrated by excerpts from a study of infection following surgery for fracture of the hip presented in 1958, and a study of infection following spine fusion presented in 1961, surgery of this magnitude may carry a rate of infection up to 4 per cent. The frequency of association of inordinate hematoma and infection in these patients appears related, and measures to minimize this factor have become a routine part of good surgical technique. These measures include maximum attention to hemostasis where possible, supplementing routine drainage by suction if necessary, and the use of compression dressings, etc.

However, because hematoma is sometimes inevitable, indeed unavoidable in certain cases, and because this hematoma is an unusually good culture medium when it becomes a non-circulating lake maintained at 101 degrees in a healing wound, it is the duty of all of us to seek to minimize the air and contact contamination of this wound in the operating room and on the ward.

Further, although past misunderstandings concerning "prophylactic" antibiotics has taught some lessons, there is a place in certain unusually vulnerable wounds for a bacteriocoidal antibiotic if it is given at a time and by a route at the time of surgery that insures an adequate concentration in the hematoma.

Abstract of paper given by Dr. George B. Ambrose at Wound Infection Forum, Hartford Hospital, October 16, 1964,

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DR. GEORGE B. AMBROSE, Assistant Professor of Clinical Orthopedic Surgery, College of Physicians and Surgeons, Columbia University, New York; Assistant Attending, New York Orthopedic Hospital at Columbia-Presbyterian Medical Center, New York.

Infections In Orthopedic Surgery At Hartford Hospital

(Comments On Paper Given By Dr. George B. Ambrose)

Harry R. Gossling, M.D.

■ Problems of infection in bone are peculiar by the nature of the tissue itself, and its reduced ability to resist and control infection within itself. This is due to its rigid structure minimizing its ability to eradicate dead space, its vulnerability to loss of blood supply, and the large inorganic component to its structure, which in the absence of blood supply and viability, can act as a foreign body.

It is paramount, therefore, that in any operative procedures involving bony tissue that the most careful and refined techniques of pre-operative preparation and wound care are carried out. Discussion further emphasized specific methods of preparation of the skin, draping, and surgical techniques helpful in avoiding infection. The greatest signficant problem in orthopedic surgery in regard to hazard of wound infection appeared to be due to hematoma formation in the presence of varying degrees of contamination often-times in patients whose general body resistance was altered by debility, chronic illness, or multiple trauma. It was noted that surgical drainage of orthopedic wounds has become increasingly popular. Our experience at the Hartford Hospital has been confined to such drainage in the presence of hip reconstruction, and it was felt essential that when such drainage is used that the drains should be pulled at 24 hours post-operative.

Abstract of paper given by Dr. Harry R. Gossling at Wound Infection Forum, Hartford Hospital, October 16, 1964.

DR. HARRY R. GOSSLING, Associate Staff in Orthopedic Surgery, Hartford Hospital, Hartford, Connecticut.

Use Of Neomycin In The Prevention Of Infection

Edgar Poth, M.D.

■ Neomycin, a rapidly acting, broad spectrum bactericidal substance, has been quite effective as judged clinically in preventing the development of infection in presence of known contamination.

Neomycin is incorporated in practically all schemes of intestinal antisepsis and serves to convert the usual secondary type of healing of an intestinal wound to stimulate closely primary healing. The bacteria are killed rapidly in fecal suspensions when exposed to one-half to one-quarter per cent Neomycin. Adequate intestinal antisepsis manifests a high degree of protection against ischemic necrosis of bowel.

The impression that irrigation of contaminated, soft tissue wounds with dilute Neomycin solutions reduced markedly the incidence of infection led to study of contaminated deep wounds in guinea pigs. Not only was local irrigation highly effective in preventing the development of infection, but sufficient systemic effect was obtained to protect distant wounds from infection.

It was observed that the irrigation of the peritoneal cavity resulted in a lowering of the post-operative temperature course. Intraperitoneal administration of single relatively small doses of Neomycin intraperitoneally protected guinea pigs significantly against the development of infection in deep wounds contaminated with feces. Single, Tolerated doses of Neomycin solutions intraperitoneally protects mice from otherwise fatal intraperitoneal fecal contamination.

Abstract of paper given by Dr. Edgar Poth at Wound Infection Forum, Hartford Hospital, October 16, 1964.

DR. EDGAR POTH, Professor of Surgery, University of Texas Medical Branch, Galveston, Texas.

Further Experience On The Local Use Of Neomycin

(Comments On Paper Presented By Dr. Poth)

Robert W. Painter, M.D.

■ I have followed Dr. Poth's work on intraperitoneal Neomycin with great interest for a number of years and have been using intraperitoneal and wound antibiotic irrigations for about seven years in my own practice. I first became interested in this after Schatten and his co-workers began using Neomycin for experimental peritonitis produced in dogs. Dr. Poth has popularized its use in man and stated that this was an effective method of reducing intraperitoneal as well as wound infection. Dr. Cohn has done a considerable amount of experimental work showing that there was an effective decrease in the mortality of dogs in which intraperitoneal antibiotics were used in the treatment of experimentally produced appendicitis. The presentation Dr. Burke gave at this Forum yesterday would lend support to the importance of using antibiotics at the time of peritoneal or wound contamination rather than in the postoperative period.

Personally, I started using Neomycin about seven years ago in cases of intraperitoneal and wound contamination. There were some reported deaths due to respiratory depression because of the synergetic action of this drug with ether and curare. To my knowledge there has never been a report of a death in an adult when one gram or less of this drug was used intraperitoneally. However, Dr. Cohn has shown that Kanamycin, which is a similar type of bactericidal drug from the streptomyces family, was effective but the danger of toxicity was much less.

For the last several years I have been using Kanamycin, one-half gram placed in the peritoneal cavity and one-half gram to irrigate the wound. I have had no cause to regret the use of this drug and although it is difficult to prove its effectiveness, I definitely feel that clinically it has reduced the incidence of wound and intraperitoneal infection complications.

I enjoyed Dr. Poth's presentation and agree that we should consider the local use of antibiotics at the time of wound and intraperitoneal soiling.

Abstract of paper given by Dr. Robert W. Painter at Wound Infection Forum, Hartford Hospital, October 16, 1964.

DR. ROBERT W. PAINTER, Associate Staff in Surgery, Hartford Hospital, Hartford, Connecticut.

A New Operating Technique To Help And Prevent Wound Infection

Stanley M. Levenson, M.D.

Studies of the application of germfree technology to special problems of clinical care of patients have been carried out by us since 1958. (Levenson, S. M., Trexler, P. C., Malm, O. J., Horowitz, R. E., and Moncrief, W. H.: Surg. Forum, XI: 306, 1960. Levenson, S. M., Trexler, P. C., LaConte, Major M. Pulaski, Col. E. J., Am. J. of Surg., Vol. 107, No. 5, pp. 710-722, May, 1964). Two basic isolator systems have been developed: the surgical isolator system for operating room use and the patient isolator system for ward use. These two systems are used in conjunction with one another to provide an integrated isolator system for patient care throughout hospitalization. Dr. Louis DelGuercio, Mrs. Marjorie LaDuke, R.N., Miss Mary Johnson, R.N. and Peter Kranz, an engineer are now collaborating in these studies.

Department of Surgery, Albert Einstein College of Medicine, Yeshiva University, New York.

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Abstract of paper given by Dr. Stanley M. Levenson at Wound Infection Forum, Hartford Hospital, October 16, 1964.

DR. STANLEY M. LEVENSON, Professor of Surgery, Yeshiva University, New York, New York.

The intent of the surgical isolator system is to provide a controlled environment wherein surgery can be performed in an environment free of exogenous microorganisms, air borne and contact. Exclusion of the wound from the ordinary environment of the operating room is accomplished by operating through a sterile flexible disposable plastic chamber, glued aseptically to the surgically prepared skin. Accordingly, only the specific site of operation, the necessary surgical equipment and supplies and the gloved hands of the surgical team are in direct contact with the wound and the sterile interior of the isolator which is inflated by air sterilized by passage through a fiberglass filter similar to the type used in germfree animal isolators. The temperature, humidity and flow of this air is regulated. The rest of the patient, surgical team, supporting tables and room air are outside the isolator and thus effectively separated from the internal environment. Several different types of isolators have been designed for performing various types of operations. These range from compact gauntlet isolators for fairly simple operative procedures to helmet-jacket isolators for more complicated procedures. In the helmet-jacket isolators, the surgeon, assistants and scrub nurse are in helmet-jacket combinations attached to the wall of the isolator to provide free and easy movement of the operating team. The anesthetist is outside the isolator, has ready access to the patient and has an unimpaired view of the operative field. This technic has no direct effect on microbes present in the patient, such as those in his intestines, but it does allow control of environmental microorganisms (air borne and contact) and the humidity and temperature to which operative areas are exposed.

The second isolator system is an attempt to devise not only a practical solution to the problem of protecting those patients highly susceptible to infections, but also a means of preventing cross-contamination when infections already exist by effectively isolating patients with serious infections. In this system, the patient, or part of the patient, is contained within the isolator and therefore separated from the medical and para-medical staff, visitors, other patients and the like. The types of isolators used range from simple gloved bags which may be used to protect areas of limited extent to whole-body and room isolators in which patients may be maintained and treated for long periods. These technics make possible control of not only the microbes in the environment but also the temperature and humidity, factors of significance for certain types of patients, e.g., the severely burned patient.

The Cleanliness Of The Operating Room In Determining Wound Infections

Carl W. Walter, M.D.

■ Cross infection among surgical patients seldom occurs in a well managed operating room. Nursing units and diagnostic laboratories are the arena where the game of cross infection is played, Personnel, themselves victims of the occupational hazard of working in hospitals, may serve as intermediaries in the transmission of infection. They are the chief source of exogenous bacteria in the operating room.

Even though it is isolated by proper ventilation, change of clothing, restriction of access and similar techniques, the human connection to the remainder of the hospital persists. The carrier is the basic factor in the ecology of the postoperative infection. He is the living nidus that provides simultaneously continuity and ubiquity of dissemination.

There is little in the aseptic ritual that controls bacteria from this source under the current concepts of asepsis. Both the patient and the management of the operating room or delivery suite are the helpless victims of custom.

Abstract of paper given by Dr. Carl W. Walter at Wound Infection Forum, Hartford Hospital, October 16, 1964.

DR. CARL W. WALTER, Surgeon, Peter Bent Brigham Hospital, Boston, Massachusetts. Clinical Professor of Surgery, Harvard Medical School, Boston, Massachusetts.

Clinical Medicine

Repeat Cesarean Section Complicated By Placenta Previa

From The Committee On Maternal Morbidity And Mortality

This 30-year-old white woman, Rh positive, serology negative, gravida 4, para 3, was first admitted to the hospital at 26 weeks gestation, with the chief complaint of active, painless vaginal bleeding.

Previous Obstetrical History

One, four and six years prior to this admission the patient had been delivered by cesarean section. The reason for the primary cesarean section is unknown. There was no history of any abnormal hemorrhage.

Prenatal Course

This was significant only for the history of intermittent painless vaginal bleeding for several days prior to the first admission. Repeated speculum examinations did not reveal any cervical lesion.

First Admission

There was active vaginal bleeding at the time of hospitalization, and an estimated blood loss of 400 cc. occurred before the bleeding stopped spontaneously. Admission hematocrit was 38 per cent and the patient showed no evidence of shock. One thousand cc. of blood was given during this admission. After the bleeding stopped a flat film of the abdomen was taken with the placentogram technique. This did not establish definitely a low-lying placenta. The patient was kept in the hospital. The estimated fetal size was 3 pounds. After a week in the hospital she was discharged on pelvic rest and daily communication with her physician. There is no mention of iron therapy being prescribed.

Interval History

The patient "spotted" occasionally but otherwise had an uneventful week at home. Then there was another spontaneous episode of free bleeding, and she was immediately re-hospitalized.

Second Admission

The bleeding subsided soon after admission. The blood pressure was normal; pulse 120, respirations 20. The physician decided on continuing a conservative regime and a transfusion was started. Soon thereafter she passed an estimated 1,000 cc. of clotted blood from the vagina. The uterus was soft and non-tender. The blood pressure dropped to 100/60 and the pulse rose to 130. She was prepared immediately for cesarean section, which was done under cyclopropane anesthesia, by low flap transverse section. A living, 2-pound 12-ounce baby was delivered. The placenta was situated in the lower uterine segment; the cervix was extremely thinned-out and there was considerable scar tissue. The placenta was firmly attached to the cervix and there was much difficulty in removing it. There appeared to be an element of accreta present. Shortly after beginning to attempt to separate the placenta, the anesthetist reported that no maternal blood pressure was obtainable. There was profuse bleeding from the placental sinuses and despite attempts to suture the sinuses and the use of packing, bleeding continued. Because of inability to control the hemorrhage, hysterectomy was done, and the vaginal vault was approximated with interrupted sutures. In spite of the vigorous pumping of blood intravenously, infusion of neocortef, levophed, neosynephrin, the blood pressure failed to respond, and the patient did not rally. Finally, the heart ceased to beat, and intrathoracic cardiac massage for 45 minutes failed to give any response. The patient was pronounced dead about 3½ hours after admission.

Autopsy diagnosis was that of placenta previa; Postpartum uterus with surgical lacerations; cervical implantation of the placenta. There was no evidence of accreta. The patient had received a total of 15 pints of blood.

Comments

There has been one other case in the state recently that is very similar to this case. From both, we learn that placenta previa in an instance of repeated cesarean section is a situation quite different from the usual placenta previa. The placenta implantation may be abnormal, and one should be on the look-out for this type of complication. One wonders whether all of these special patients should be delivered by classical cesarean section, followed by hysterectomy, without disturbing the placental site. The surgical problem with the placenta is not unlike that of abdominal pregnancy. Under very special circumstances one might consider the practicality of leaving the placenta in situ at the time of cesarean and only doing further surgery if one's hand were forced.

Suturing placental sinuses is a futile procedure, by and large, as is packing. Without doubt, there was delay in this patient at the operating table in proceeding with the hysterectomy.

Momentary manual compression of the aorta or uterine arteries is sometimes of aid in locating primary sources of uterine hemorrhage. Intramuscular pitocin in the lower uterine segment may be worth a try. The use of a large needle for the intravenous drip should be standard procedure with all cesarean sections. With grave hemorrhage, a cutdown and threading a polyethylene catheter in the vein my facilitate the pumping in of blood. Intraaortic or sternal transfusions should be kept in mind. Internal hypogastric artery ligation has to be resorted to at times.

The expectant management of placenta previa in instances of previous cesarean section should be approached with even more caution than usual. By no means do we mean to state that the expectant treatment of placenta previa in the usual case is not a very justifiable means of handling the situation when one is faced with the additional problem of prematurity.

We wish to point out again that intrathoracic cardiac massage, when the etiology of cardiac arrest is hemorrhage, is a futile procedure, unless one has good reason to believe that one can get ahead of the hemorrhage by multiple transfusions.

In this case, as well as the other alluded to, the physician thought he was dealing with placenta accreta. However, the pathologist did not ever confirm this impression. The reason for the clinical impression is that the placenta is burrowing into an abnormal site, i.e., lower uterine segment, scar tissue, etc., and not the normal decidua, and therefore normal cleavage planes are not present. The retroplacental area is not the usual one, and the mechanism for closing the large maternal sinuses is lacking.

This patient was in incipient shock when the operation was started, as evidenced by dropping blood pressure and a rising pulse. A plea for better communications between anesthetist and operator is in order, as the operator was not notified of the falling blood pressure until it was unobtainable, and apparently the anesthetist was not made aware of the rapidity of blood loss. It seems probable that the patient was not transfused vigorously enough early in the operation. Had this been done, the outcome may have been quite different.

There is little question but that this patient should have been on iron therapy in adequate dosage after the first admission, regardless of what the hematocrit was. This is empiric, but it is surely justifiable on the basis of doing everything to keep the hemoglobin at a maximum level to cover what will be the anticipated hemorrhage that is almost bound to occur later in the pregnancy.

It is not the total amount of blood given that is necessarily of importance. The important thing is to give the blood at the proper time. A lot of blood too late is not anywhere near as efficacious as enough blood at the proper time. Once one gets behind in the matter of treating hemorrhagic blood loss, one has a tough time getting ahead, and sometimes does not succeed, as in this case.

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CONNECTICUT MEDICINE
160 St. Ronan Street,
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Tetanus Still Potent

People of the jet age are just as susceptible to the fatal poisons given off by a tetanus infection as their grandfathers were in the horse-and-buggy days. The difference is that today the prudent person and his family are immunized against "lockjaw," as the infection is sometimes called. A high proportion of unprotected patients with tetanus infections die of the disease. Since 1935 about four of every 10 Connecticut cases had ended in death.

Practical Protection Steps

Active immunization with toxoid is needed not only for children and men working out-of-doors but for all persons. It is safely and easily achieved by two intramuscular injections about one month apart. Once protection is achieved it must be maintained throughout life by booster injections every three to four years. An additional toxoid injection should also be given as soon as possible after puncture wounds, dog bites or lacerations contaminated by dirt or soil. Unless the injured person has had toxoid immunization, safety requires that he get tetanus antitoxin. Shortcomings of relying on this antitoxin include the allergic reactions some people have to the antitoxin made from horse serum, and the few weeks of resulting immunity. Though tetanus occurs more in men due to occupational hazards, women too are subject to injuries which may be contaminated with tetanus spores and should be adequately protected.

The Organism At Work

What causes tetanus or lockjaw, as some call it? It is produced by spores of a bacteria found chiefly in farm animals. When the skin is cut or torn these spores may enter the tissues and if the wound is deep or seals over, these spores change and produce powerful toxins, or poisons. These toxins, if not prevented by antitoxins, act on the body to produce muscle spasms, convulsions and death.

Since even a sliver could be the source of infection, it is best to have the body ready to deal with tetanus immediately. Protect yourself with tetanus toxoid as soon as possible and see that everyone in your family is protected. Then keep a record of the immunizations so that you will know when to visit your physician for booster doses to keep your protection at a safe, high level.

Tetanus has become less frequent in the decades following World War I(but in 1963 there were three cases, all fatal and all preventable. Between 1925 and 1934 there were 121 cases, while 31 cases have occurred in the decade 1955-64, because the tools of immunization were not used.

Hygroton®
brand of chlorthalidone
the long-acting diuretic

Indications
Many types of edema involving retention of salt and water.
Contraindications
Hypersensitivity, and most cases of severe renal or hepatic disease.
Precautions
Reduce dosage of concomitant antihypertensive agents by at least one-half. Discontinue if the BUN rises or liver dysfunction is aggravated. Electrolyte imbalance and potassium depletion may occur; take special care in cirrhosis or severe ischemic heart disease, and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended.
Side Effects
Constipation, dizziness, dysuria, headache, hyperglycemia, hyperuricemia, leukopenia, muscle cramps, nausea, purpura, thrombocytopenia, transient myopia, urticaria, vomiting and weakness.
Average Dosage
One tablet (100 mg.) daily with breakfast.
Availability
Tablets of 100 mg. in bottles of 100 and 1000.
For full details, see the complete prescribing information.

Geigy

Geigy Pharmaceuticals
Division of
Geigy Chemical Corporation
Ardsley, New York

How does Hygroton® brand of chlorthalidone stack up against other diuretics?

Not very high. In terms of one week's therapy, that is. The usual dosage is just one tablet per day. Very often, the dosage is even lower. So a week's therapy doesn't amount to much.

That's why it's nice to work with Hygroton®, brand of chlorthalidone. You have fewer tablets to prescribe. Your patients have fewer tablets to take. And fewer to pay for.

For sheer diuretic effectiveness, choose Hygroton®, brand of chlorthalidone. It generally promotes more natruresis per tablet than the thiazides. We'll stack it up against any diuretic.

Geigy

AN INVITATION TO VISIT

NEW HAVEN'S NEWEST MODERN CONVALESCENT HOSPITAL

The NEW HAVEN CONVALESCENT HOSPITAL, Inc.

50 MEAD STREET, NEW HAVEN, CONN.

ELLIOT POLSKY, M.D., Administrator

First all-new ultra modern convalescent hospital constructed near New Haven's two major hospitals. Beautifully landscaped. Ample off-street parking. Located within three minutes from both the Hospital of St. Raphael and Grace-New Haven Community Hospital.

Built in accordance with latest recommendations in field of **convalescence and modern geriatrics.** Contains fully equipped physio-therapy department. Hydro-therapy under physician's supervision. X-ray equipment. Modernly equipped treatment room. Regular services of dentist and podiatrist. Beauty shop and barber shop. Dietician in charge of special diets. Attractive dining area for ambulatory patients. Meals served from heated carts.

Two-story, completely fireproof, brick building. 47 outside rooms, each with large picture window overlooking spacious landscaped area for outdoor relaxation. **Every room has its own private bathroom. All accommodations are private or semi-private.** Beds are new high-rise hospital type. Hydraulic lifts on bathtubs. Beautiful solariums, sunporches and patios. Air-conditioning, telephone jack and master television antenna available in every room.

Attending physician's instructions will be followed meticulously by trained nurses under our administrator's supervision.

Excellent nursing care is offered for the chronic invalid, the cardiac, the senile, the aged, the post-operative, the diabetic, and the geriatric. Full rehabilitation program including recreational and occupational therapy. Grounds contain individual gardening plots. No restrictions on visiting hours.

FOR INFORMATION CALL . . . 777-3491

FROM THE GENERAL MANAGER'S OFFICE

William R. Richards, m.d., *General Manager*
160 St. Ronan Street, New Haven, Conn.
Telephone 865 0587

James G. Burch
Assistant to General Manager

Josephine P. Lindquist
Director of Public Relations

SUMMARY OF ACTIONS
COUNCIL MEETING

Wednesday, January 20, 1965

I. Attendance

Present in addition to the Chairman, Dr. S. J. Martin, were: Drs. Gilman, Hess, O'Connor, Goldberg, Brandon, Davis, Weise, Sr., Gardner, M. Caplan, Pitock, Bradley, Grendon, Egan, H. Caplan, Phillips, Shepard, Rogol, Fabro, Abbot, W. Martin, Spitz, and Hastings. Also present: Mrs. Lindquist, Mr. Burch, Mr. Chilcoat (AMA), and Dr. Richards. Absent were: Drs. Cullen, Hughes, Ayres, Ciccarelli, Seigle, Epstein, and Major.

II. Routine Business

Approval Of Minutes

As printed and distributed, it was VOTED to approve the minutes of the meeting of November 19, 1964, as amended on Page 4 (Readership Survey—Connecticut Medicine) to change "Denis S. O'Connor, Councilor-at-Large" to read "Denis S. O'Connor, Secretary."

Life Membership

It was VOTED to approve applications for Life Membership of the following eligible Active Members:

Llewellyn Hall, Hartford (HCMA)
Robert G. Reynolds, West Simsbury (HCMA)
E. Myles Standish, Hartford (HCMA)
Peter J. Steincrohn, Coral Gables, Fla. (HCMA)
James E. Stretch, Simsbury (HCMA)
Carl Thenebe, West Hartford (HCMA)

Committee Appointments

It was VOTED to fill vacancies on three committees as follows:

Committee on National Legislation—Bernard A. Burnham, Waterbury

Committee on Health Careers (MCMA)—Joseph A. Manzi, Middletown

Committee on Local and County PR—Milton M. Lieberthal, Bridgeport

Election Of Student Members

It was VOTED to elect 14 Connecticut residents who are attending schools of medicine to Student Membership in the Society. The names of the new Student Members will be published in the Journal.

Representative—Annual Congress On Medical Education

It was VOTED to authorize Harold D. vonGlahn, Old Lyme, to attend this Congress (Chicago, February 6-10, 1965) as a representative of the Society, and to reimburse him for usual expenses up to $282.00. Dr. vonGlahn is a member of the Committee on Medical Education and Licensure, and is asked to file a report with the Council on the proceedings of the Congress.

Representatives—11th AMA Conference Of State Mental Health Representatives

It was VOTED to authorize John Donnelly, Chairman of the CSMS Committee on Mental Health, to attend this Conference (Chicago, March 5-6, 1965) as a representative of the Society, and to reimburse him for usual expenses up to $196.90. Dr. Donnelly is asked to file a report with the Council on the proceedings of the Conference.

III. Old, New And Special Business

Reports—Committee On Hospitals

Two reports of the Committee on Hospitals were received and acted on as follows:

(a) *On the Complaint of John A. Woodworth, Moosup*: The Committee concludes that Dr. Woodworth's problem with the State Health and Welfare Departments concerning the "point" system of evaluating convalescent hospitals and nursing homes has been resolved through correspondence between Dr. Woodworth and the State Departments named. However, the Committee recommends that the Society "offer its advice" to the

Health Department on those factors of the "points system" that involve professional care.

Action: It was VOTED to accept this report as submitted, and to direct the Committee on Hospitals to obtain full written information on the "points system" of rating convalescent hospitals and nursing homes from the Commissioner of Health, study same, and make a further report with recommendation to the Council on this subject.

(b) *Admendment to "Supplementary Report on Hospital Planning" (Council 9/10/64)*: Having been asked by the Council to "clarify" the intent of the last paragraph of the report filed on 9/10/64, concerning the activities of the New Haven County Hospital Association, the Committee submitted an amendment to the last sentence of the last paragraph of the report which reads as follows:

"Basing its judgment on the information provided by Drs. Martin and Davis, the Committee commends the New Haven County Hospital Association for its initiative in this undertaking, and feels the Association is acting in the public interest."

Action: It was VOTED to accept the amendment to the report, as submitted by the Committee on Hospitals, and to inform the New Haven County Hospital Association of this finding and conclusion of the Committee.

Requests—Committee On Postgraduate Education

(a) It was VOTED to grant a special appropriation of $100 to the Committee to finance a dinner meeting at which "to discuss means of achieving better coordination of postgraduate activities throughout the State."

(b) It was VOTED to authorize the holding of a Clinical Congress in 1966, and to continue the present policy of giving honoraria to speakers participating in the 1966 program, but to inform the Committee that continuing deficits in recent years have almost entirely depleted the "Clinical Congress Surplus Fund" and that further deficits relating to Clinical Congresses will have to be paid out of general funds. It was further requested to ask the Committee to study "ways and means" through which the deficits of future Congresses could be substantially reduced or even eliminated as an expense to be borne exclusively by the Society.

Participation In AMA Teletype System

It was VOTED to commit the Society to participate in the TWX system which will allow "instant" communication between the state medical societies and AMA and between each other. All installation and maintenance costs will be borne by AMA, with each society being responsible to pay only for its own outgoing teletyped messages.

Request To Sponsor "The Connecticut Health Careers Council, Inc."

It was VOTED to receive as information the package of material sent to the President as the basis on which the Society may become a "Sponsor" of CHCCI, and to accept the invitation to send a representative to the pre-incorporation meeting of the Health Careers Council which has been called for Wednesday, February 3, 1965. It was further VOTED to designate Bernard F. Mann, Jr., New Haven, as the Society's representative to the pre-incorporation meeting, and to ask Dr. Mann to make a report with recommendations to the Council concerning the Society's becoming a founding "Sponsor" of CHCCI.

Request—Representative To Connecticut "Core Committee" On Cardiovascular Diseases

It was VOTED to appoint Harold E. Speight, Middletown, or his designate from among the members of his "Advisory Committee on Cardiovascular Diseases to the State Department of Health," to serve as a CSMS representative on a Connecticut "core committee" (with Dr. Paul H. Twaddle, President of the Connecticut Heart Association, and Dr. Henry Eisenberg, of the State Health Department) which is expected to "develop a plan of action to implement the recommendations or conclusions of the 2nd National Conference on Cardiovascular Diseases (Washington, D. C. 11/22-24/64)." The request for appointment came from Dr. Cyrus H. Maxwell, Executive Secretary to the Conference.

Recommendations—Committee On Public Health

It was VOTED to adopt a series of recommendations submitted by the Committee on Public Health.

A recommendation that every county medical association committee on public health work actively with local health departments and the public to promote medical and educational measures to control venereal diseases.

Progress Report—Ad Hoc Committee On Corporate Practice Of Medicine

In a report submitted by this Committee (David A. Grendon, Chairman), it is stated that "an impasse has been reached" in efforts to get Connecticut Blue Cross to modify its Outpatient "Rider" so as to preclude Blue Cross from making payments to hospitals for physicians' care and treatment as "hospital services." It was VOTED to adopt the report of the Committee, with its recommendations, and to authorize the Committee to select and engage legal counsel, draw up plans for taking specific and appropriate legal action, and report such plans to the Council prior to implementing the legal action decided upon.

Communication Re Censorship—Board Of Directors Of HCMA

In response to a suggestion filed by the Board of Directors of the Hartford County Medical Association that the Council is "not aware of any specific modus operandi (being followed by its elected Committee on Preliminary Study of Censorship Questions)" and that it "might be appropriate for the Council to request a written statement from its Committee covering the specifics it intended to employ (in hearing the appeal of Moorad vs. HCMA)," the Council called upon the Chairman of the Committee, Ralph L. Gilman, to report on the progress made to date in the Moorad appeal and to outline the procedure which the Committee plans to follow in completing its assignment. Having received this information, the Council VOTED complete confidence in the course which has been followed by the Committee thus far, and in its announced plans for pursuing its hearing of the Moorad appeal. Kenneth F. Brandon, Speaker of the House, wished it to be recorded that he abstained from voting on this question.

Proposal on "Medical Interview Newspaper Series"—PR Division

It was VOTED to approve, in principle, this proposal to arrange for a series of newspaper interviews with medical leaders in different parts of the State, and to authorize the Public Relations Division to implement the proposal for a period of four months as outlined in its recommendation to the Council. It was further VOTED to request the PR Division to investigate the possibility of having the PR Director work cooperatively with newspaper medical science writers and others with a view toward continuing these interviews as a function of the PR Department rather than through the medium of a paid "free-lance" writer as presently proposed.

Policy Re Welfare Beneficiaries In General Hospitals—State Welfare Department

It was VOTED to communicate to the Welfare Commissioner the deep concern of the Council at the disruption of the patient-physician relationship which a new directive would appear to bring about, and to request from the Commissioner a full explanation of the policy advanced by his Department, effective January 1, 1965, that authorizes the Assistant Medical Director to review the charts of welfare beneficiaries who have been admitted to a general hospital for 10 days or longer, and to make recommendations for "discharge of beneficiaries whose definitive medical or surgical general hospital care has been completed, and (so) notify the district (welfare) office for appropriate follow-up."

Co-Sponsorship Of "Leadership Conference On Mental Health Manpower"

Frank K. Abbot, Waterbury, CSMS representative to the Connecticut Mental Health Planning project, informed the Council that the Project is desirous of holding a three-day "Leadership Conference on Mental Health Manpower" during the month of March, 1965, and, because the Project is somewhat short of appropriated funds at this time, additional funds are being sought from other sources. Dr. Abbot has learned that if a state medical society agrees to sponsor a program of this type, money may be available from the American Medical Association under a grant of Smith, Kline and French. The total amount needed for the Conference is about $5,000. Some of this money will be furnished by the Project; some it is hoped may be obtained from philanthropic sources; and the amount that it is suggested the Society ask AMA to provide is $1,500.

Acting on Dr. Abbot's recommendations, it was VOTED to have the Society co-sponsor the Conference with the Mental Health Planning Project, and to file a request with AMA that $1,500 of SKF funds be made available to the Society to be used to help finance the Conference. It was understood that the Society would assume no direct liability for the conduct and financing of the Conference.

National Health Legislation—Special Convention, AMA House Of Delegates

Having received a report from the General Manager on the December 13 AMA "educational planning conference," a report from Dr. Gilman on the January 9-10 AMA legislative conference on Kerr-Mills, and a report from the General Manager, Mr. Chilcoat (AMA Field Representative) and others on the forthcoming special convention of the AMA House of Delegates (Chicago, February 6-7), the Council engaged in a general discussion of the subject matters of these reports and the national picture on health legislation now before the Congress.

Pursuant to these discussions, it was VOTED to authorize the attendance of a full complement of Society representatives (AMA-Delegates, Alternate Delegates, President, and President-Elect) at the special convention of the AMA House of Delegates, as well as the General Manager, and to reimburse the representatives who attend for usual expenses. It was further VOTED to direct the General Manager to furnish all representatives with copies of a "position paper" on King-Anderson type legislation and related matters which he had prepared, and to inform the representatives that the considerations contained therein were not to be looked upon as "instructions" to them from the Council but only as some thoughts approved by the Council which might assist them as participants in the work of the special convention. Information copies of the document will also be sent to members of the Council and of the Society's state and national legislative committees.

COMPAC

Kenneth F. Brandon, Hartford, Treasurer and a Director of COMPAC, reported that the Board of Directors of the political action committee were gratified to have received $3,000 as a corporate gift from the Society and would soon be submitting a report to the Council on the uses to which the funds had been put. Acting on Dr. Brandon's expressed hope that COMPAC would be able to augment the Society's legislative efforts at the 1965 session of the General Assembly, the Council VOTED to request the Chairman of the CSMS Committee on State Legislation to invite COMPAC's Directors to attend meetings of the legislative committee (as guests) with a view toward coordinating the programs of the two organizations.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on January 20, 1965. Detailed minutes of the meeting are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

IMPORTANT — PLEASE READ

On recommendation of the Committee on Public Health, the Council adopted (1/20/65) the following resolution:

WHEREAS: The Committee on Public Health of the Connecticut State Medical Society has reported that the incidence of gonorrhea and of primary and secondary syphilis is on the increase, therefore be it

RESOLVED: That the Council of the Connecticut State Medical Society urge that:

1. Each physician report every diagnosed case of gonorrhea and/or syphilis, in accordance with State law.

2. Each patient having gonorrhea and/or syphilis be interviewed for the purpose of determining contacts, and that such contacts be located, examined and treated whenever necessary.

3. Physicians utilize the services of local and state departments of health for the purpose of interviewing such patients, and for locating and following up such contacts.

WOMAN'S AUXILIARY

President
Mrs. Charles M. Krinsky, New London

President-Elect
Mrs. William R. Richards, New Haven
First Vice-President
Mrs. James F. Jones, Danielson
Second Vice-President
Mrs. David O'Keefe, Hartford

Recording Secretary
Mrs. Harry Levine, Fairfield
Corresponding Secretary
Mrs. Hilliard Spitz, New London
Treasurer
Mrs. Stephen A. Hulme, West Hartford

Mental Health

The A.M.A. Council on Mental Health has asked the various State Auxiliaries to undertake the promotion of a series of half-hour program records made especially for radio, called "MIRROR TO THE MIND." These have introductions by Dr. Edward R. Annis and are moderated by Mr. Robert Goldman, Contributing Editor of the *Saturday Evening Post,* The subjects covered include "Treating Mental Illness," "Narcotic Addiction," "Alcoholism," "The Law and Psychiatry," "Juvenile Delinquency," "Children," "Community Mental Health," "Sociopaths," "The Family," "The Nature of Mental Illness," "Mental Retardation," "Research," "The Aged." Panelists discussing the subjects are specialists in these fields. Thus far in Connecticut the following stations have indicated an interest in presenting these programs: WNAB and WPKN, Bridgeport; WBIS, Bristol; WICC, Fairfield; WCNX, Middletown; WATR, Waterbury; WMMM, Westport; WILI, Willimantic.

County Notes

Hartford—The Annual Medi-Capers Dance was held on January 23rd for the benefit of the Memorial Scholarship Fund.

Litchfield—A fund raising project for A.M.A.-E.R.F. is being planned by a group in New Milford—details not yet available.

New London—A Fashion Show and Luncheon as well as a Cake Sale will be held on March 23, to raise money for A.M.A.-E.R.F. The Auxiliary is also sponsoring a Cook Book project, the proceeds of which are to be contributed to their Scholarship Fund.

New Haven—The Burgundy Ball, a dinner dance, for the benefit of the Scholarship Fund will be held on Saturday, March 6th. The location has been changed to the new Downtown Holiday Inn on Chapel Street in New Haven.

"The Doctor's Wife"

"He has given his life to others,
This I do not begrudge,
For his extra hours of service
To me, need not be a drudge.
Tho I am both mother and father
the many hours of the day,
I've matured beyond my speculation
and the time quickly passes away.
It wasn't easy to make the choice
to give MY life to others.
Frustrations, I was ready to voice,
yet, somehow managed to smother
The phone, a black monster,
encircled with grief,
relating pain day and night,
beckoning my husband to give relief,
and I to acceptance and insight.
For . . . this is the day of the doctor's life
AND . . . this is the way of the doctor's wife!"

Gwen N. Duckworth, Piggott, Ark.
(Member of the Greene-Clay Medical Auxiliary of Arkansas)

School Health

Education in health and physical education in Connecticut schools lags behind other states.

We have relatively few local school health councils.

A far greater desire for and appreciation of health, nutrition, physical fitness, and recreation need to be encouraged. This is a problem of communication of ideas—a matter of education. We must influence local school and health boards.

OBITUARIES

William L. Conlon, M.D.

1910 - 1964

Dr. William L. Conlon of 102 Lakewood Circle, Manchester, Connecticut and chief of radiology at The Manchester Memorial Hospital, died on the afternoon of November 16, 1964 at the hospital, shortly after admission on the same day. Dr. Conlon was born on March 29, 1910 in Pawtucket, Rhode Island, the son of the late Thomas L. and Georgianna Partillor Conlon.

He attended Providence College and graduated in 1932. In 1936 he received his medical degree from Jefferson Medical College in Philadelphia, Pa. Following an internship he began the practice of general medicine in Manchester in 1937.

In 1942 he enlisted in the U. S. Navy and was commissioned a 1st Lieutenant in the U. S. Navy Medical Reserves. Active duty started in March, 1943 and shortly thereafter he served in the Mediterranean around the southern coast of France and western coast of Italy.

Following his discharge from active duty in 1946, he resumed general practice in Manchester. Then in 1950 he began a residency in radiology at the Lahey Clinic in Boston, Massachusetts. Upon the completion of his residency in 1953 Dr. Conlon opened an office at 29 Haynes St., Manchester, for the practice of diagnostic radiology. Shortly thereafter he was appointed an associate in radiology at the Manchester Memorial Hospital and in 1957 became chief of its department of radiology.

His medical affiliations consisted of membership in the Radiological Society of North America. The New England Roentgen Ray Society, and the radiology section of the Connecticut State Medical Society. He was a member of the Manchester Medical Society, the Hartford County Medical Association, and the Connecticut State Medical Society. Devoted to the church, he belonged to the Campbell Council K. of C., The Manchester Chapter of the Holy Family Retreat League, and the Holy Name Society of St. James Church.

He is survived by his wife, Mrs. Eileen Kelliher Conlon; two sons, William L. Conlon, Jr., Lt. Junior Grade serving with the U. S. Navy, and Michael F. Conlon, a senior at Providence College; a daughter, Kathleen M. Conlon, a student at Emanuel College, Boston, Massachusetts; a brother, Joseph R. Conlon of Washington, D. C.; and a sister, Mrs. Mary Newman of New Jersey.

His activities were many and varied for he loved the outdoors and engaged in hunting, fishing, golf, skiing and traveling.

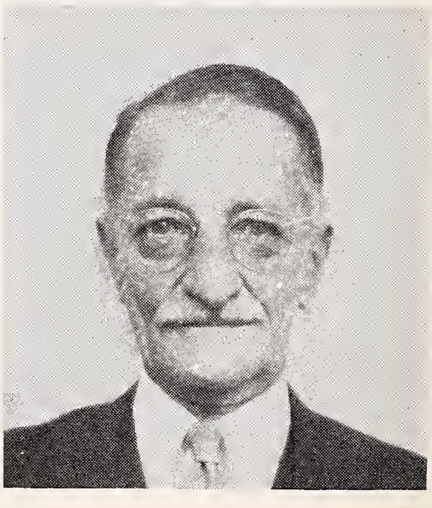
At the time of his death, he was associated in the practice of radiology with Dr. Douglas Roberts and Dr. Robert E. Karns at 29 Haynes St., Manchester.

His untimely death at 54 years of age has created a void that will be hard to fill and he will be sorely missed by his many colleagues and friends.

Edmond R. Zaglio, m.d.

Chester Waterman, M.D.

1881 - 1964



Chester Waterman: born in Ogdensburg, New York, August 2, 1881, son of Robert E. and Lois Blodgett Waterman. He attended the public schools in Ogdensburg and upon graduating from the Ogdensburg Free Academy entered McGill University, graduating with the class of 1905. He was to have gone to London for one year's study and return to McGill as a "demonstrator"; however, the illness of his father prevented this and he went into private practice. This was neither successful nor satisfactory and now began a series of institutional posts. His first was as a substitute at the Ogdensburg State Hospital; then came service at Wards Island State Hospital as an intern. Later he was transferred to Central Islip State Hospital with his first staff appointment. The year 1911 found him back at the Ogdensburg State Hospital; but one year later he was transferred to the Willard State Hospital. He had never lost his desire for private practice and when an opportunity was presented to go into eye, ear, nose and throat work he promptly gave up his post and went to New York City to take courses in this field. When he returned, he found the opportunity no longer existed and he entered a "group practice" in Cortland, New York. Again he was doomed to disappointment and he abandoned this venture taking a post at the Manhattan State Hospital where he served until 1922. In November of that year, he came to the Connecticut State Hospital in Middletown where he served as assistant superintendent for eleven years. For one year of this time, during the absence of Dr. Leak, he was acting superintendent. In February 1934, he was transferred to the Norwich State Hospital as head of that institution. He left the State service in April 1940 planning to take a long vacation, but in July of that year he started the private practice of psychiatry, which he maintained until October 1959. He has often said that these were his happiest years. He was always active in civic affairs and also worked with Dr. V. Gerard Ryan at Elmcrest Manor in Portland. He was much in demand throughout the State for his expert advice, consultation and testimony. After retirement there came a gradual decline and the last several months were spent at the Meadowbrook Convalescent Hospital where he died suddenly on November 29, 1964.

LLOYD W. MINOR, M.D.

Observations And Impressions From The First Training Conference In The Organization And Management Of Small Interdisciplinary Conferences

The conference was based on the premise that the burgeoning of scientific knowledge in size, complexity, and organization is making information less readily available to men in the sciences. Another was that a lack of communication exists between scientists in similar as well as different fields of investigation.

An example of such poor communications is illustrated in most medical meetings. The usual format consists of a series of "canned" presentations which have often been prepared far in advance of the meeting and may even have been delivered elsewhere or published. There is usually scant time for true discussion. The net result is that although such presentations may stimulate discussion, which is the actual means of cross-communication and exchange of ideas, this discussion takes place in bars, hotel rooms, or the halls outside the conference room. In fact, many men who attend such meetings rarely go to the formal lectures. They know that the lectures will soon appear in the proceedings of the meeting and can be read at their leisure and that the informal discussions outside of the lecture hall provide the most stimulation and communication of valuable material.

Dr. Frank Fremont-Smith has long pioneered the concept of the interdisciplinary conference. The sponsors of such a conference arrange an informal meeting of about twenty-five men of various disciplines to discuss different biologic viewpoints of a problem. There are no lectures. Informal discussion is encouraged among the participants. New ideas are rapidly developed and misconceptions or disagreements rapidly aired.

Since new ideas in science may not follow a logical progression of thought, the stimulation provided by the cross fertilization of related scientific disciplines may play an important part in scientific discoveries.

From the University of California, Los Angeles, School of Medicine, Department of Surgery, Head and Neck, Los Angeles, California 90024.

Special Notices

CONNECTICUT ASSOCIATION FOR BRAIN-INJURED CHILDREN

February 4th at 8:15 p.m.

The first CABIC meeting of 1965 will feature a talk on the brain-injured child by Dr. Jerome Schiller, child psychologist with wide experience in this much-discussed problem. Dr. Schiller received his B.S. from Queens College; M.S., University of Wisconsin; Ph.D. in Clinical Psychology, University of Pittsburgh; and is presently on the Staff of the Stamford Child Guidance Center; Consultant, Wilton School system; Tester, Norwalk Schools, Lecturer on Psychology at Fairfield University and in private practice in Bridgeport. Formerly he was Clinical Psychologist at the Bridgeport Child Guidance Center and an Assistant Professor at Syracuse University.

The talk will be followed by a question and answer period after which refreshments will be served. The meeting will be held on Thursday, February 4th, at 8:15 p.m. at the Norwalk High School Library, East Avenue (1 traffic light north from Exit 16, Conn. Turnpike).

Admission is free and the public is invited.

VASCULAR DISEASE SYMPOSIUM

March 31, 1965

A medical symposium on "Evaluation and Management of Patients with Occlusive Cerebral Vascular Disease" will be held at Fiano's Restaurant in Bolton (Connecticut) March 31.

The program begins at 12:30 p.m. with opening remarks by the moderator, Dr. Gustav W. Anderson, Chief Neurology at Hartford Hospital.

Physicians participating and their subjects, are: Dr. Louis A. Sokoloff, National Institute of Mental Health, "Physiology of Cerebral Circulation;" Dr. Gilbert H. Glaser, Yale University School of Medicine, "Clinical Symptoms and Signs of Focal Cerebral Ischemia."

Dr. Irving S. Wright, Cornell University School of Medicine, "Medical Management of Occlusive Cerebral Vascular Disease;" Dr. Clark H. Millikan, Mayo Clinic, Rochester, Minn., "Selection of Patients for Surgical Treatment of Occlusive Cerebral Vascular Disease," and Dr. E. Stanley Crawford, Baylor University School of Medicine, "Surgery for Occlusive Cerebral Vascular Disease."

A Dutch Treat Cocktail Social Hour will precede a "fat-controlled, low cholesterol dinner." Guest speaker, Dr. Jeremiah Stamler, will present "Fats and Fancy" (Epidemiology of Cerebrovascular Diseases and Implications for Practical Management). Dr. Stamler is Director of the Division of Adult Health and Aging for the Chicago Board of Health.

The Symposium is being sponsored by the Connecticut Heart Association and Eastern Windham County, Manchester, New London, Norwich, and Willimantic Chapters.

Each Connecticut physician will receive a program and registration form. Others may request forms from the Connecticut Heart Association, 65 Wethersfield Avenue, Hartford, Connecticut 06114.

AMERICAN COLLEGE OF PHYSICIANS

Presents

Postgraduate Course No. 11

CARDIOLOGY

March 15-19, 1965

Arranged by
EMORY UNIVERSITY SCHOOL OF MEDICINE

Meeting Place: Auditorium, Grady Memorial Hospital, Atlanta, Ga.

DIRECTOR
J. WILLIS HURST, M.D., F.A.C.P.

Fees: A.C.P. Members, $60; Nonmembers, $100.

Minimal Registration: 50; Maximal Registration: 240.

Note: Please send all registrations, requests for information and application blanks to: Edward C. Rosenow, Jr., M.D., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pa. 19104.

AMERICAN SOCIETY FOR THE STUDY OF STERILITY TWENTY-FIRST ANNUAL MEETING

April 2, 3 and 4, 1965

Jack Tar Hotel, San Francisco, California

Information concerning arrangements may be obtained in advance of the meeting from the Chairman of Technical Exhibits, Dr. Coy L. Lay, 1600 Lakeland Hills Boulevard, Lakeland, Florida.

ENVIRONMENTAL HEALTH CONGRESS SCHEDULED APRIL 26-27 BY AMA

Environmental influences from the ultravirus to the megalopolis and the manner in which they affect man, his health and well-being will be the subject of AMA's Second Congress on Environmental Health Problems to be held April 26-27 at The Drake in Chicago.

The Congress, based on the theme "Population, Environment and Health," will explore population problems, changing environmental influences, changing disease patterns, control and prevention of disease and urban planning for healthful living.

National leaders from the fields of medicine, microbiology, aerospace medicine, sociology, virology, communicable disease and urban planning will participate in this wide ranging interdisciplinary program. Some 500 representatives from medicine and allied fields are expected to attend.

Further information may be obtained by writing to the Department of Environmental Health, American Medical Association, 535 N. Dearborn Street, Chicago, Ill., 60610.

ACOG ANNUAL MEETING SET FOR SAN FRANCISCO APRIL 4-8

The American College of Obstetricians and Gynecologists will hold its 13th Annual Clinical Meeting, Sunday-Thursday, April 4-8, 1965, at the Civic Auditorium in San Francisco. Registration is open to all physicians, regardless of whether they are Fellows of the College. Sunday will be devoted to registration, with the official opening of the meeting scheduled for Monday morning.

Scientific papers, round tables, panel discussions, luncheon conferences, forums on current investigations, motion pictures, closed-circuit color television programs, and scientific and commercial exhibits will comprise the program. Emphasis will be placed on discussion and audio-visual aids, rather than on formal presentation of papers.

A variety of obstetric-gynecologic topics are scheduled for discussion treatment, including the role of the OBG physician in marriage and family problems, amenorrhea, early fetal loss, cervical cancer, reproductive biology, dysfunctional bleeding, perinatal loss, sociologic and medical aspects of sterilization, toxemia, and bleeding in late pregnancy.

Among the topics of formal papers will be prenatal factors influencing the premature infant, treatment of vulvar malignancies, surgical treatment of cervical cancer, elective induction of labor, fetal salvage in eclampsia, pregnancy and progeny after prolonged use of progestin-like substances for contraception, and the effects of caudal anesthesia on uterine activity.

In addition, some 200 scientific and industrial exhibits will be on view.

Registration fee is $25 for the meeting; interested physicians may write to The American College of Obstetricians and Gynecologists, 79 West Monroe Street, Chicago, Illinois 60603, for a preliminary program and housing and registration forms.

Doctor's Office

Joseph M. Corey, M.D., has recently become associated with John F. Piro, M.D., in the practice of general surgery at 156 East Avenue, Norwalk.

Frederick S. Eadie, M.D. and Frank J. Carter, M.D., announce the association of Leonard A. Greene, M.D. for the practice of obstetrics and gynecology at 120 Lafayette Street, Norwich.

Kisik Kim, M.D., announces the opening of an office for the practice of psychiatry at 1423 Chapel Street, New Haven.

Louis Perlin, M.D. of Middletown, a psychiatrist, announces that he has joined Associated Psychological Services at 61 Beaver Road, Wethersfield. Dr. Perlin will work with Drs. Jack I. Esterson and William R. Poe, in the evaluation of children, adolescents and adults.

AROUND THE STATE

From The State Department Of Health

A sharp increase in the reported number of cases of several diseases in Connecticut was recorded in 1964. German measles, which finished the year with 15 reported cases in the latest week, surged to a total of 40,737 cases in 1964, mostly occurring in the first half of the year, said Franklin M. Foote, M.D., Commissioner, Connecticut State Department of Health. In all of 1963 there were only 3,945 cases of German measles, and in 1962, 1,338 cases. This disease is of public health interest because it may cause malformation in unborn children when the virus infects a pregnant woman early in pregnancy.

Streptococcal sore throat cases reported continued their rise in 1964, going to a total of 25,813 compared with 20,170 in 1963 and 4,502 in 1960. There were 482 cases in the latest week, up from 354. Infectious hepatitis also climbed in the year from 616 in 1963 to 667—five cases through October, 1964 resulting in fatalities.

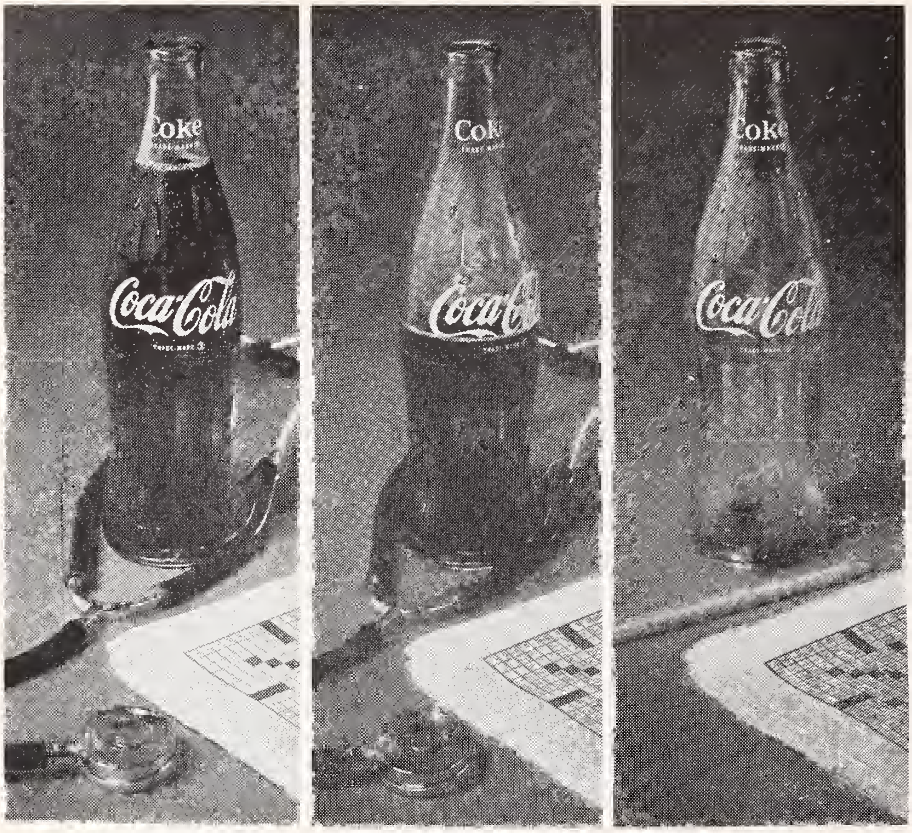
In northeastern Connecticut an influenza-like infection is under investigation as the apparent cause of widespread illness, chiefly in children. Centers of the population affected appear to be Putnam and Woodstock; each reported 50 cases of influenza.

Flu Linked To Asian Strain

Cases of influenza reported in Eastern Connecticut have been identified as the Asian strain by the State Health Department's Laboratory. According to Franklin M. Foote, M.D., State Commissioner of Health, this is the strain of the influenza virus that was common in outbreaks of the disease since 1957. During the week ending January 16, 1965, 65 cases of influenza were reported to the department, the same number as the previous week. Doctor Foote again urged as he had previously this past fall that high risk groups—those persons over 65, those with chronic illness and pregnant women—be immunized against influenza.

Measles cases in Connecticut reported by local directors of health fell to 241 from 576. Strep throat cases, at 645, compared with 721 the previous week. Chickenpox cases almost doubled from 248 to 430, while German measles stood at 25 compared with 22. The latter virus disorder affected 122 in the comparable week of 1964, when the unusually large attack rate was beginning to develop.

Tuberculosis cases of all types came to 14, up from 8.



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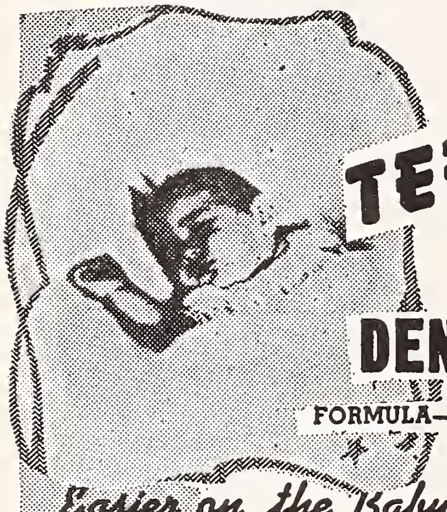

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BOOKS RECEIVED

Books received for review are acknowledged in this department and such acknowledgement must be regarded as a sufficient return for the courtesy of the sender. Selection will be made for review in the interests of our readers and as space permits.

The Mask Of Sanity. Fourth Edition. An attempt to clarify some issues about the so-called psychopathic personality. By Hervey Cleckley, M.D., The C. V. Mosby Company, St. Louis, 1964. 500 pp. $9.75.

Control of Glycogen Metabolism. Ciba Foundation Symposium. W. J. Whelan, Consulting Editor; Margaret P. Cameron, Editor for The Ciba Foundation, Little, Brown and Company, Boston, 1964, 434 pp. with 72 illustrations. $12.50.

Structure And Function Of Heart Muscle. American Heart Association Monograph, Number Nine. Edited by John R. Evans, M.D. Proceedings Of a Symposium Held February 14 and 15, 1964 in Toronto, Canada under the auspices of the Ontario Heart Foundation and Faculty of Medicine, University of Toronto. American Heart Assoc., Inc., N.Y., 1964. 224 pp., Illustrated. $3.00.

Opportunities In A Psychiatry Career. By Henry A. Davidson, M.D., Vocational Guidance Manuals, Educational Books Division of Universal Publishing and Distributing Corp., New York, 1964, 144 pp., paper bound, $1.45; cloth bound $2.65

Idiopathic Hypertrophic Subaortic Stenosis. American Heart Association Monograph, Number Ten. From the Cardiology Branch and Clinic of Surgery, National Heart Institute, Bethesda, Md. Contributors, Eugene Braunwald, M.D., Costas T. Lambrew, M.D., Andrew G. Morrow, M.D., George E. Pierce, M.D., S. David Rockoff, M.D., M.S., and John Ross, Jr., M.D. American Heart Association, Inc., N.Y. 1964. 213 pp. Illustrated. $2.50.

The Thyroid Gland, Volume 1. The Thyroid Gland, Volume 2. Edited by Rosalind Pitt-Rivers, Ph.D. and W. R. Trotter, D.M., Butterworths, London, 1964. 290 pp. (2 volumes) $29.50 set.

Modern Trends In Immunology. Edited by Robert Cruickshank, M.D., Butterworth, Inc., Washington, D.C., 1963, 270 pp. $12.75.

Mark Your Calendar

Connecticut State Medical Society
173rd Annual Meeting

April 27, 28, 29, 1965
Statler Hilton Hotel, Hartford

Annual Meeting Of The House Of Delegates

Tuesday, April 27, 1965 — 10:00 A. M.
Statler Hilton Hotel, Hartford

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NEW BOOKS IN REVIEW

CARDIAC ARREST AND RESUSCITATION. Second Edition, by Hugh E. Stephenson, Jr., M.D., The C. V. Mosby Company, Saint Louis, 1964. Eleven contributors, 448 pp., Illustrated. $15.00.

Reviewed by: LOUIS H. NAHUM

In this book the author together with eleven contributors has attempted to evaluate and put into proper perspective newer techniques, suggestions and laboratory data relative to the broad area of arrest and resuscitation. One sees at once how the opportunities for resuscitation have been sufficiently extended and refinement of resuscitation techniques very appreciably improved. Although the knowledge has grown prodigiously, the author has, on the whole, succeeded in being precise and to the point.

This book will provide the basic factual information that a physician should have who is likely to encounter an occasional patient requiring cardiac resuscitation. The cardiac surgeon who has mastered the technical aspects of heart surgery will find this book a source of augmented information particularly as it involves elective cardioplegia. Of the various methods described, one hypocalcemic cardioplegia, is not mentioned although it has been known since 1913 that removing calcium from the perfusion fluid brings the heart to arrest, whereas its enzymatic mechanisms remain alive and produce an electrocardiogram.

The more recent advances in the knowledge of resuscitation are all covered by this book; the use of hyperbaric oxygenation, hypothermia, pace-making devices, left ventricular arrest pumps, closed chest defibrillation and close chest cardiac massage.

The surgeons and anesthesiologists in the country are facing the basic fact that they must resuscitate several thousand men, women and children every year. They need this kind of book because it brings up to date, digests and evaluates the widespread efforts and observations from so many disciplines, from physiology, biochemistry, biophysics, electrical engineering, as well as clinical medicine. It is an excellent source book on this vital subject.

COMMON BACTERIAL INFECTIONS: PATHOPHYSIOLOGY AND CLINICAL MANAGEMENT. By Edwin J. Pulaski, M.D., Col. MC, U.S. Army. W. B. Saunders Company, Philadelphia, Pennsylvania, 1964. 301 pp., Illustrated. $8.50.

Reviewed by: HERBERT LEVINE

The rate of appearance of new antimicrobial drugs roughly parallels the rate of development of circumventing changes in the metabolism of micro-organisms that render them resistant to the action of previously available agents. This unfortunate situation places any volume concerned with the treatment of bacterial infections in danger of being obsolete at the time of publication. Pulaski's book, which appeared on October 16, 1964, seems to be as up-to-date as publishing techniques will permit, and is a concise and clinically useful guide to management in this rapidly changing field. Recently introduced drugs such as cephalothin and nalidixic acid are included, and newer concepts such as germ-free animal studies are discussed.

The volume is well-organized. The preliminary chapters dealing with the dynamics of infection, principles of antimicrobial therapy, and extensive descriptions of available drugs place the subsequent material on a sound footing. The importance of making specific identification of organisms and the advantages and limitations of in-vitro sensitivity determinations are stressed. Excellent tables of drug indications and toxicities, organism sources and identification, specific measures in certain traumatic situations, and procedures for joint aspiration make for clarity and ease of access.

Two chapters are devoted to infectious problems in trauma and in burns, and another to bacteremia and septicemia. In the chapter on trauma, Pulaski emphasizes the importance of tetanus prophylaxis on a wide scale, and the chapter on burns contains a discussion and table on the relative merits of open and closed methods of treatment. The remainder of the text consists of six chapters concerned with bacterial infections of specific organ systems. Each of these includes discussions of etiology and pathogenesis, bacteriology, clinical and laboratory diagnosis, complications, and special considerations as well as the details of antimicrobial drug therapy. A most welcome feature is the stress placed throughout on the general supportive and other aspects of the management of the patient with each condition. Such matters as symptomatic treatment, drainage, relief of urinary obstruction, etc. are incorporated with drug therapy in each section on management. A brief but well-selected bibliography follows each chapter.

The book is by no means an exhaustive treatise, nor was it intended to be. The information presented is concise and practical, and the author takes full cognizance of the limitations and dangers of antimicrobial therapy. This volume is an excellent handbook for the practicing physician.

DISORDERS OF LANGUAGE. Ciba Foundation Symposium. Edited by A. V. S. De Reuck and Meave O'Connor. Little, Brown and Company, Boston, Massachusetts, 1964. 345 pp. with 35 illustrations. $11.00.

Reviewed by: GILBERT H. GLASER

This book represents the proceedings of a uniquely oriented Symposium on Disorders of Language held in May 1963 in England. The participants, from the disciplines of neurology, psychology, psychiatry, psychology, linguistics, phonetics and philosophy, directed themselves mainly towards the problem of the relationships of linguistics and phonology to the language disorders of aphasia. Some speech disorders of certain mental illnesses also were considered.

Interesting analyses of the methods of linguistics including typology, non-verbal communication, cerebral dominance and localization particularly with regard to aphasia are presented by such well-known workers as Brain, Critchley, Jakobson, Bay, Luria, Alajouanine, Lhermitte, Hecaen, Milner, Zangwill and Stengel. The recorded discussions are quite stimulating. The material is heavily descriptive and complex but most basic and worthwhile, especially for students already familiar with the problems in this field.

GIVE AND TAKE, THE DEVELOPMENT OF TISSUE TRANSPLANATION. By Francis D. Moore, M.D. W. B. Saunders Company, Philadelphia and London, 1964. 182 pp., 19 Illustrations. $6.00.

Reviewed by: LOUIS H. NAHUM

Dr. Ullman, working in Vienna back in 1902, transplanted the kidney from the dog to the neck of a goat. It didn't take and, in fact, homatransplantation of tissues in man was regarded merely as a visionary dream even in the early 1950's. In this short span of time it has been shown to be possible. But the idea has gripped the imagination of artists and mythologists since the time of the chimera. In this book, *Give and Take,* Professor Moore of Harvard Medical School, has given us a vivid account of the history of organ transplantation, its rapidly evolving aspect as a product of the new biology.

In this book we can follow developments in autografts, homografts, and heterografts, observe the intricacies involved in probing antigen, antibodies and immunity. Early organ grafts were done without suppression of immune reactions, then came the era of whole body irradiation and finally of today's success with immunosuppresive drugs.

The text is based upon the important events and the two hundred and fifty odd kidney transplants performed in the last decade. The author details several existing case histories which mark the turning points in transplantation progress. Comments and anecdotes abound in this fascinating book. Subjects like the recognition by the immune systems of our own proteins as harmless; the mechanism of immunologic memory; a tale of blood chimerism; finally the dilemma of tissue and organ donation both ethical and legal are beautifully covered.

The bibliography is brief, the quotations are numerous and one senses in the pages that the author is a great surgeon, a great experimenter and a great scholar. It makes fascinating reading for everyone, educated layman, medical student, and practitioner alike.

SURGERY OF THE BREAST. Louis H. Jorstad, M.D., F.A.C.S., F.I.C.S.; with the collaboration of Meredith Jorstad Payne, M.D., F.A.C.S. The C. V. Mosby Company, Saint Louis, 1964. 220 pp. $15.00.

Reviewed by: IRA S. GOLDENBERG

In female patients, excision of a breast mass is one of the commonest operative procedures and the principal reason for the large number of such operations is the concern of the patient, and the physician as well, that cancer may be present. This concern is indeed well founded since breast cancer is the most frequently diagnosed malignancy in the female. Approximately 60,000 women in the United States will have this diagnosis established during the coming year if present trends continue.

Anything which adds to knowledge about breast disease, benign or malignant, is helpful to the practicing physician. Dr. Jorstad, a surgeon engaged in private practice in Missouri, has written a complete primer of breast diseases. He utilizes his own experience (somewhat limited when compared to that of the larger university centers) as a background for survey in detail of significant reports dealing with breas problems published during the past twenty years. In many areas of controversy, Dr. Jorstad presents all viewpoints anc allows the reader to make his own final judgment.

Particularly valuable in this book is the large section devoted to plastic and reconstructive breast operations writter by Dr. Jorstad's daughter, Dr. Meredith Jorstad Payne. Thi surgical area now recognized as so important was all bu neglected in the medical literature until scarcely ten year ago.

Reproduction of photographs is not particularly good bu the line drawings of technique are excellent and a complete bibliography by topic is included. This is a good source boo for the general surgeon and the student.

A MARRIAGE MANUAL FOR CATHOLICS Author: Dr William A. Lynch. Publishers: Trident Press, New York, 1964. 348 pp. $4.95.

Reviewed by: ORVAN W. HESS

This book, compiled by an obstetrician and gynecologis with the approval of the Catholic Church and incorporating a foreword by Richard Cardinal Cushing, Archbishop of Boston is a thorough and candid guide for a successful marriag from the viewpoint of the Catholic. The author, on the basis of his unique physician-patient relationship permitting ar objective appraisal of marriage and its problems augmentec by his experience as lecturer at pre-marital conferences, has provided an exhaustive treatise. The frank discussion of the diverse aspects of marriage includes much information anc advice which should be of great value to the Catholic. It may well be enlightening to the non-Catholic and may perhaps invite a less critical attitude. The chapter on "Facts of Love and Life" describes in detail the anatomy anc physiology of the sex organs as well as technics of love making which may to the layman seem to border on the pornagraphic. The chapter on "Limitation of the Family" touches upon modern sociological attitudes concerning the serious problem of over-population and moral consideration of contraception including the use of the "pill"—an issue under consideration currently at the Ecumenical Conference ir Rome. The conclusion reached in the last paragraph, placing emphasis on "periodic continence based on strong motivation" as the means of family limitation leaves much to be desirec when the results observed by physicians, visiting nurses anc welfare workers are realistically reviewed. The book may be recommended as informative in a field of major significance It is probable that some opinions expressed in the book will not meet complete agreement in certain quarters of Society

BLOOD PROGRAM IN WORLD WAR II. By Brigadier General Douglas B. Kendrick, M.C., U.S.A. The Office of the Surgeon General, Department of the Army, Washington, D. C., 1964. 922 pp., 195 illustrations, for sale by the Superintendent of Documents, Government Printing Office, Washington, D. C. $8.00.

Reviewed by: JOSEPH R. BOVE

The latest volume in the official history of the Medical Department of the U. S. Army in World War II is the complete and engaging story of the blood and plasma program in that conflict. An additional chapter on the Korean War adds value by bringing the history up to date.

Both the strength and the weakness of this volume lie in ts meticulous attention to detail. The text is well written and eads easily. The liberal use of documents, letters and subommittee minutes tends to slow the reader down and offset he author's prose. Historians of the future, however, will ind little lacking in this volume.

The chapters on shock, the history of blood transfusion, and the evaluation of the use of whole blood in casualties are most valuable and especially recommended to surgeons. The lessons learned in the war can well be applied to disaster planning and all involved in this aspect of community medical care will find this book an important source.

General Kendrick has done a superb job of organizing the material and has written well. The book is not only valuable but also readable.

PLACEMENT WANTED

OBS.-GYN.—SEEKS PRACTICE WITH GROUP or clinic with possible academic affiliation, Board Diplomate, 37 years of age, presently on faculty of Department of Obstetrics & Gynecology, University of Louisville School of Medicine.

GENERAL SURGEON – SEEKS EITHER GROUP OR PARTNERSHIP PRACTICE in Southern Connecticut. Board eligible, 33 years of age, military obligation fulfilled.

OPHTHALMOLGIST – Board certified, with possibility of either partnership or single practice sought.

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TUBERCULOSIS CONTROL PHYSICIAN needed by office of TB Control, Hospital Care and Rehabilitation of State of Connecticut. Physician will assist in carrying out public health education program; assist planning, organizing and supervising of case-finding activities. Will work with private physicians, lecture on problems of TB Control. Some clinic work. Salary ranges from $11,640 to $15,080. Full benefit coverage. Reply directly to R. C. Edson, M.D., Office of TB Control, Hospital Care and Rehabilitation, 79 Elm Street, Hartford, Connecticut.

Opportunity for Board eligible or Board qualified Pediatrician, Orthopedist and Radiologist to associate with group of specialists in newly constructed building to be completed July, 1965. New Haven hospitals close by.

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ANY PERSONS INTERESTED IN THE ABOVE ARE ASKED TO COMMUNICATE WITH THE GENERAL MANAGER'S OFFICE, 160 ST. RONAN STREET, NEW HAVEN.

1965 MEETINGS

March 18—181st Annual Meeting of the New Haven County Medical Association to be held at the Waverly Inn, Cheshire, Connecticut beginning at 2:30 p.m.

April 27-29—Connecticut State Medical Society Annual Meeting to be held at Statler-Hilton Hotel, Hartford, Connecticut.

September 24—40th Clinical Congress to be held in Mary S. Harkness Auditorium at the Yale University School of Medicine, New Haven. The program will be devoted to "Advances in the Treatment of Infections" and "Advances in the Treatment of Shock."

MEDICAL NEWS

AMA Report Hails New Era In Medical Education

Medical education in the United States is entering "perhaps the period of greatest growth in its history," the American Medical Association reported today.

"There will be more medical schools and more teaching hospitals, more medical students and more faculty, more continuing education and more paramedical education, more research and more service in the medical center," the AMA Council on Medical Education concluded on the basis of its 64th Annual Report on Medical Education in the United States covering the 1963-64 school year.

"It is always difficult to define the boundary lines of an era during the period of transition but this seems clearly to be the beginning of a new phase in medical education."

The anticipated growth, necessitated by increased demands for medical service resulting from the population explosion, has been spurred by passage of the Health Professions Educational Assistance Act of 1963, the council said. The act provides federal funds to encourage construction of new medical schools and the expansion of existing ones.

There are now 88 medical schools in operation, including the University of New Mexico School of Medicine which opened in September of this year, the council noted. Since the last annual report, the University of Hawaii announced plans for a School of Biomedical Sciences in Honolulu, making a total of 11 schools in the planning stage.

"It can be anticipated that by 1968 or 1969, there will be 99 medical schools in operation," the council said.

As to the number and quality of students applying to medical schools, this appears to be "a time of plenty," according to the report.

Reports of admissions committees from the nation's medical schools reveals a marked increase in applicant activity during the past three years following a period of about eight years of relative scarcity of applicants.

The number of applicants fluctuated only slightly between 1953-54 and 1961-62. However, the past two school years have shown annual percentage increases of about 10 per cent. These increases were attributed to the overall increase in college and university enrollment due primarily to the marked increase in the college-age population.

The academic achievements of the 1963-64 first-year class compare favorably with those of its predecessors on the basis of gradepoint averages and Medical College Admission Test scores, it was reported.

The combined percentage of A and B average students has ranged between 82 and 90 per cent since 1950.

"Thus it is apparent that the population of students entering medical school is drawn from a representative sample of qualified college graduates, skewed to those with proven academic ability," the report said.

Also cited was a yearly increase over the past 12 years in the number of students taking the admission tests, indicating a growing pool of acceptable applicants.

At the same time, the council urged that there be no letup in recruitment programs since there is no way to regulate the supply of applicants to yield enough well-qualified students to fill every medical school.

"More often than not it seems that we have too many or too few," the council commented. "If a choice between the two is necessary, medical educators would choose 'too many.' And since the public welfare is at stake, most people would agree."

The number of medical school graduates for 1963-64 was 7,336, an increase of 72 over the previous year and the third consecutive year the number has increased, it was reported.

"On the basis of the size of the third-year class in 1963-64, it would appear that the present growth rate will continue," the council predicted.

The total number of students enrolled in 87 medical schools for 1963-64 was 32,001, or 510 more than during the previous year. Of the total, 2,244 or seven per cent were women.

In the past decade, enrollment has increased by 3,774, or 13.3 per cent, enrollment of women increasing at a rate greater than that of total enrollment. The number of schools has increased from 80 to 87, and the new schools accounted for almost 60 per cent of this increase.

In view of planned expansions and the admission of the first-year class at the University of New Mexico, the council said, "it is safe to assume that the number of medical students enrolled in 1964-65 will be slightly greater than in the past."

More than 1,500 additional full-time faculty members will be required to staff the new medical schools and most of the existing schools are considering expansion of their present classes by 20 per cent, according to the report.

Medical schools, however, have been fairly successful in meeting their expressed demands in past years, the council said, adding:

"When openings exist and funds are available, new men appear to fill the positions. Individual schools will undoubtedly have trouble in finding the right pharmacologist, or the right obstetrician at the exact time he is needed, but there seems to be no reason to fear a general shortage of faculty."

Recommend Wider Training In Heart-Lung Resuscitation

A Johns Hopkins medical team urged wider training of laymen in the emergency techniques of closed chest heart massage and artificial respiration.

"If more individuals are to be saved from heart attacks, drownings, and other forms of sudden death, it will be necessary to train not only ambulance and rescue crews, but also all who are interested in these emergency measures," according to Robert J. Wilder, M.D., James R. Jude, M.D., William B. Kouwenhoven, Dr. Ing., and Martin C. McMahon, Baltimore.

"Over 500,000 people die every year from heart disease alone," they wrote in the current Journal of the American Medical Association. "Many of these individuals could be saved if emergency cardiopulmonary resuscitative maneuvers could be instituted at the scene and at the instant cardiac and respiratory activity cease."

Their opinion was based on a study of 153 resuscitations performed by the ambulance service of the Baltimore City Fire Department between Nov. 22, 1961, and March 19, 1964.

The study revealed that there was an interval ranging from 7 to 20 minutes between the time an emergency call was received and the ambulance arrived at the scene.

Of the 153 patients, 101 were dead on arrival at the hospital or after one hour of additional resuscitative efforts.

"In many of these cases . . . the patient's history when obtainable revealed the impossibility of success," the authors said.

Fifteen patients recovered spontaneously after resuscitative efforts and suffered no ill effects as a result of the procedures, they reported.

"What the outcome would have been if resuscitation was not instituted cannot be determined," they said. "In several cases, however, it very definitely appears that the institution of mouth-to-mouth breathing and closed chest cardiac compression was life-saving."

Forty-two autopsies revealed three to six rib fractures in five patients, but in none was there lung damage.

The study also showed that the most frequent cause of the collapse was heart disease in 75 patients, followed by respiratory problems in 23, and injury in 13. Six of the 15 survivors had a heart condition.

The age of the 153 patients ranged from 9 weeks to 91 years, as did the age of the 15 survivors. Five of the survivors were aged 71, 73, 76, 87 and 91.

The 73 men of the ambulance force were instructed by staff members of the Johns Hopkins Hospital and the Baltimore City Hospitals. They were given a three-hour course of lectures and films, followed by an hour of individual instruction. In addition, they served 32 hours in the emergency room and recovery room of Baltimore City Hospitals. The training was reinforced at six-month intervals by lectures, demonstrations, and practice with a manikin.

Closed chest heart massage, in which pressure is rhythmically exerted on the patient's breast bone, was introduced in 1960 by Drs. Jude and Kouwenhoven and G. Guy Knickerbocker, M.S.E.

Large Red Blood Cells Clue To Disease

Abnormally large red blood cells detected by laboratory techniques have proved to be a valuable clue to a variety of disorders, Dr. Paul G. Hattersley, Sacramento, California reported recently.

Using modern precise techniques, Dr. Hattersley studied all adults with large red blood cells admitted to Sutter General and Memorial Hospitals of Sacramento as well as the Sacramento Clinical Laboratories during the first three months of this year. Of the total of 120, 49 were men and 71 women. One-third of these patients were 65 years old or older.

In 32, no disorder commonly associated with large red blood cells could be diagnosed although many of these patients were quite ill, Dr. Hattersley reported in the current (Sept. 28) Journal of the American Medical Association.

In the remaining 88, evidence of one or more disease was found, in many instances as a direct result of investigation prompted by the finding of the large red blood cells, he said.

Cirrhosis was the most frequent disorder encountered, occurring in 34 of the 88 patients. Cancer, including leukemia, made up the second largest group with 17 cases. Acute blood loss was found in 14 patients and anemia in 11.

Although heart and respiratory diseases are not generally regarded as causes of enlarged red blood cells, Dr. Hattersley pointed out, there were 10 patients in this group with congenital heart disease, heart failure, or emphysema.

Large red blood cells occur commonly in non-anemic individuals and further investigation of such patients not infrequently reveals serious and unsuspected disease, he concluded.

Many Infectious Agents Cause Sore Throat

Medical researchers reported today that many infectious agents can cause a sore throat, a finding that will make prevention more difficult.

The common syndrome of acute tonsillitis and pharyngitis which cause fever and a sore throat was studied among students at the University of Wisconsin by Alfred S. Evans, M.D., and Elliot C. Dick, Ph.D., Madison, Wis.

"From the standpoint of possible vaccination, it was discouraging to find that no single virus group played a major role in the causation of this syndrome," they said

The findings parallel recent observations in other respiratory syndromes, the researchers pointed out. In all of these, they said, modern techniques have made it possible to uncover new rival groups distinguished by their multiplicity, their variation from year to year, and their varying importance from one population to another.

"While identification of the agents involved in acute respiratory infections points the way to prevention, it is apparent that the road will be a long and arduous one before the goal is attained," they commented.

All university students admitted to the student infirmary for acute pharyngitis or tonsillitis from September, 1953, to May, 1962, from whom throat specimens could be obtained, were studied. Of 405 cases, 308 were studied intensively.

The causal agent was identified in more than half of the cases, or about 64 per cent, according to the report. Of about 64 per cent, about 37 per cent were associated with viruses and about 26 per cent with hemolytic streptococci, which are bacteria.

One of the most interesting findings was that herpes simplex, the virus that causes cold sores or fever blisters, may play a hitherto unrecognized and important causal role in this syndrome, according to the authors. Herpes simplex was the virus most commonly associated with the ailment, accounting for almost 13 per cent of the identified causal agents.

From other studies, they said, it did not appear that this virus was associated significantly with the common cold or acute respiratory illness.

The symptoms of patients with herpes simplex infections rarely included fever blisters and other manifestations commonly associated with pharyngitis-tonsillitis, such as generalized aches, cough, and chills, it was pointed out. For these reasons it was concluded that this virus probably produces only a localized throat infection.

Other viruses found included the adenovirus, Coxsackie, and influenza A and B. However, none of these accounted for as much as four per cent of the identifiable causal agents.

The year-by-year incidence of causal agents in 308 cases revealed a changing pattern of activity.

One virus group may be active in one year but nearly disappear the next, the researchers said.

A total of 32 apparent herpes simplex infections were identified which were widely distributed through the years but were highest in 1958, 1961, and 1962.

Strep infections comprised the major agent involved in acute pharyngitis-tonsillitis but manifested marked yearly swings accounting for as few as 15 per cent of cases in 1953 to as many as 40 per cent in 1960.

All viruses as well as the streptococci were most active from January through April with the exception of nine unidentified viruses and five Coxsackie infections, according to the report. Secondary activity was observed from October through December.

"For the most part then, these respiratory agents were confined to the fall and winter months," the researchers concluded.

Smoking Related To Sense Of Smell

A study of the sense of smell among 500 persons indicates that there is a relationship between olfactory acuity and cigarette smoking.

The study was reported by Dr. R. E. Joyner, Texas City, Texas, in the current Archives of Otolaryngology, published by the American Medical Association.

Tests revealed a statistically significant decrease in smelling acuity ranging from the non-cigarette smokers to those who smoke 21 or more cigarettes a day.

"It is, therefore, concluded that both cigarette smoking per se and the actual amount of cigarettes smoked can be directly correlated with a diminished acuity as measured by this test procedure," Dr. Joyner said.

The subjects, all employed at an industrial plant, were told to sniff twice only from each of 14 bottles containing graduated strengths of phenol in liquid petrolatum and then state whether or not they smelled a definite distinct odor. The bottles were held an inch below the nose and sniffed in random fashion.

Previous studies have shown that there is a probable correlation between aging and deterioration of the sense of smell, Dr. Joyner pointed out.

Further analysis of his results, Dr. Joyner said, showed that the number of cigarettes smoked exerted an effect upon the observed variances which was almost four times as strong as that observed due to the age factor.

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Water Pollution, Sanitation Top Rural Health Problem

Water pollution and sanitation rank as the number one rural health problem, a survey of health educators and home economics leaders in 44 State Cooperative Extension Services showed recently.

The survey was conducted by the American Medical Association Council on Rural Health to serve as a guide for future programs.

The survey indicated that assurance of an ample supply of uncontaminated water for family and farm use in an increasing problem not only in rural fringe areas near suburban developments but in the more remote farm areas as well.

"Even though mushrooming suburban developments extending into rural areas have posed other serious menaces to public health, this problem seemed most acute," Bond L. Bible, Ph.D., rural sociologist and secretary of the AMA council, said. "Unless proper provisions are made, lack of adequate sewage disposal facilities will almost inevitably lead to serious outbreaks of contagious diseases."

Planning and zoning are needed to solve the problems that arise in land use, he added.

The second most urgent problem, highlighted by the survey, is the need for health education.

Education leads to the use of modern methods of disease prevention, sanitation and health care, including the intelligent utilization of medical services and products.

The Cooperative Extension Service in agriculture and home economics (a part of the Land-Grant University system in each state) provides these educational services. The survey results show that extension service personnel are making effective use of available health resources. They are utilizing the help of state and county health departments, state and county medical societies, and women's auxiliaries to medical societies, local physicians, nurses, and dentists. They also are actively cooperating with voluntary health agencies, farm organizations and other related groups.

Despite these efforts, however, programs to relieve acute rural problems have not yet been universally adopted.

Other important problems on the basis of the survey include:

—Cooperative community action in coordination, development and use of health facilities

—Nutrition, including teenage nutrition; and obesity

—Mental health

—Availability of health personnel

—Health care of the aged

—Dental care

—Teenage health

—Rural safety

—Hospital needs

—Animal diseases affecting man

Progress Reported On Artificial Ear Organ

Speech has been transmitted to a previously deaf patient through an experimental electronic induction coil substituting for an essential organ of the ear, California researchers reported recently.

The device serves as an artificial organ of Corti, that part of the ear's shell-shaped cochlea which transforms sound waves into impulses transmitted to the brain via the acoustic nerve.

The report by James H. Doyle, B.S., John B. Doyle, Jr., M.D., and Frederick Myles Turnbull, Jr., M.D., Los Angeles, appears in the current (October) Archives of Otolaryngology, published by the American Medical Association.

The induction coil used for this patient was a four-channel unit, the researchers explained. It was believed that electrical stimulation of several portions of the acoustic nerve independently might increased the band-width and enable the patient to obtain useful speech perception, they said.

Four separate electrodes were introduced in four different locations in the cochlea of the patient who had acquired perception deafness. Perception deafness results from conditions involving the cochlear structures or the nerve of hearing.

The four electrodes were stimulated in sequence. In this manner it was possible to introduce electrical signals at 600 cycles per second (cps) in four areas of the nerve which when combined would arrive at higher auditory centers at the rate of 2,400 cps, the authors said.

"Definite speech perception attained by such complex stimuli enabled the patient to repeat phrases," they reported.

However, they added, it now appears that a 16-channel unit will be required in order to pass audio signals similar to telephone transmission.

Dr. Doyle, a neurosurgeon, began work on an artificial organ of Corti in 1960 and reported initial success at the AMA clinical convention in Los Angeles in 1962. The research was based on the finding that in some persons acquired or congenital deafness is caused by a defective organ of Corti while they have a normal acoustic nerve.

"It is our hope," the researchers commented, "that this work will stimulate increasing cooperation between the disciplines of medicine and physics in the hope of achieving solutions to intricate and significant problems."

The authors are affiliated with the department of otolaryngology, Loma Linda University, Loma Linda, California, and the department of neurosurgery, School of Medicine, University of Southern California, Los Angeles and Garden Grove, California.

Nursing Homes

Choosing a nursing home for a relative, a friend or possibly for yourself is an important decision.

A new pamphlet from the American Medical Association offers valuable suggestions to help you with the decision.

Ideally, a nursing home is a facility which provides good nursing care in an environment as physically and psychologically homelike as possible. It may be a proprietary (privately owned) facility; under church or other non-profit auspices; or a tax-supported governmental institution. The nursing home generally will offer one or more of these types of service: (1) Residential care—room, board, laundry facilities and personal courtesies, such as help with shopping or correspondence; (2) Personal care— personal services such as help in walking, getting in and out of bed, bathing, dressing and eating, and the preparation of special diets; (3) Nursing care—nursing procedures requiring skill beyond that of the untrained person, including administering of medications, injections, catheterizations and similar procedures ordered by an attending physician.

To help you determine the level of nursing care offered, the National Council for the Accreditation of Nursing Homes accredits nursing homes in three categories: (1) An intensive nursing care facility, which provides nursing service under the supervision of a Registered Professional Nurse (RN), and an RN is on duty at all times; (2) A skilled nursing care facility, which also is under the supervision of a full-time RN, and an RN or a Licensed Practical Nurse (LPN) is on duty at all times; (3) An intermediate care facility, which is supervised by a full-time RN or a full-time LPN, with an attendant on duty and alert at all times.

The most important aid in deciding whether a nursing home is the best answer to a particular situation, and which particular home is most suitable, is a complete physical examination of the patient by a physician. The physician will then be able to assist in selecting the home. He may be able to provide a list of nursing homes in the area offering the type of service needed. Another excellent source of information is your state affiliate of the American Nursing Home Association. Your community welfare council, health or welfare department may also have information on homes in your area.

When visiting a nursing home in seeking an institution for the patient, there are some basic questions to ask: (1) What type of patients does the home accept? Is the home licensed by the state or local licensing agency? Ask to see the certificate of licensure; (2) Does the institution require a physical examination and a physician's orders for treatment prior to or immediately after admitting the patient? A good nursing home will insist on this information; (3) Is there a staff physician who actually spends time in the nursing home with the patients and the nursing staff? Does the home report regularly on the patient's condition to his personal physician? (4) What level of nursing supervision is provided? (5) What provision does the home have for dental care of patients? (6) Are facilities available for patient rehabilitation? Are they used regularly? Look for the home that tries to keep patients active and helps them take care of themselves as much as possible. (7) Is the nursing staff trained in basic rehabilitation techniques? A good staff will understand and use techniques for preventing deformity and contracture of muscles, for retraining in self-care (eating, dressing, bathing, walking, etc.) and for assisting the incontinent to regain bowel and bladder control; (8) Are there adequate safety precautions? A plan for evacuation in case of fire should be posted and the staff should be drilled periodically; (9) Does the home maintain high standards in its food service? (10) Does the home prepare therapeutic diets when needed?

Determine whether the nursing home has a general homelike atmosphere. Are the floors clean, the lawn trimmed? Is there sufficient space for each patient? Observe the attitude of the staff and the patients, as to whether relationships are amiable. If possible, visit a patient at an off-hour when you aren't on tour. Adequate recreational services also should be available. Look for certificate of accreditation by the National Council on Accreditation of Nursing Homes, and for diplomas and certificates of nursing home study on display, particularly in the administrator's office.

Find out about costs. What does the rate cover in addition to nursing care, room and board? Are extra charges made for drugs, special diets, extra nursing care, and such personal services as shampoos, haircuts, shaving?

A quality nursing home will make every reasonable effort to help restore patients to the maximum degree of independence and self-help possible. For many patients, such a facility will not be the "end of the road" but an intermediate step between the hospital and independent living at home.

Exercise

"Exercise is one of the important factors contributing to total fitness," says a new pamphlet of the American Medical Association.

To assist you in planning a program of regular exercise, the AMA offers a number of suggestions.

An exercise program should be started at an early age and continued throughout life, with certain adjustments from time to time as life advances and needs, interests and capabilities change. The amount of vigorous exercise that is desirable each day is largely an individual matter, with recommendations ranging from 30 minutes to an hour each day as a minimum.

Something of interest for every individual can be found to make exercise satisfying and enjoyable. In addition to many sports, the variety of choices includes daily habits such as walking and gardening. Hard, fast, sustained or highly competitive games and sports should not be played by persons of any age unless they have attained an appropriate state of fitness through regular training. All persons should be found by medical examination to be organically sound before training for competition or other strenuous exercise.

If you're out of training, don't try to keep pace in any vigorous sport with an individual who is properly conditioned through regular training. Being in condition for one sport dosen't necessarily mean you're in condition for another. If you've been long out of training, you will need a period of gradual conditioning to get back to strenuous activity.

How can you tell whether your exercise program is too strenuous? If breathlessness and pounding of the heart don't subside within 10 minutes after exercise, if marked weakness or fatigue persists two hours later, if you're still fatigued the next day, then you have overdone it.

If you're beginning to become active again after illness or injury, medical supervision of the effects of exercise is essential. If you are competing in body contact sports, or in sports requiring great endurance and strength, pick on someone your own size and strength. Don't try to stand up to someone much larger, stronger or more skilled. Body contact sports require protective equipment, and it's very important that the equipment be good. Careful preparation and maintenance of playing fields and other sports arenas are essential to reduction of injuries and full enjoyment of the activity.

Contributions of exercise to fitness include a sense of well-being, and development and maintenance of strength, speed, agility, endurance and skill. Each individual differs in his capacity to enjoy and benefit from exercise.

Some Persons Allergic To Plain Water

Some persons are allergic to simple contact with water, two University of Pennsylvania researchers reported recently.

For years a distinctive form of hives marked by intense itching has been seen in certain individuals as a result of heat, emotion or exertion, Drs. Walter B. Shelley, a dermatologist, and Howard M. Rawnsley, a pathologist, Philadelphia, wrote in the current Journal of the American Medical Association.

The common denominator in the development of these cases is "surface contact with sweat or even pure water," they said.

Extensive studies of three patients with typical cases showed that hives occurred after any contact with water or sweat in sensitive areas of the body. These areas generally were those rich in oil glands which usually open into hair follicles.

Interestingly, the authors related, stress or pain did not initiate hives. This is understandable, they said, because neither stress nor pain produced much perspiration. When exercise caused the patient to perspire, they added, hives resulted.

The mechanism whereby water on the surface of the skin precipitates hives and itching is not clear, the researchers said. However, they theorized that some toxic substance is formed by water acting on the oil gland or the oil secreted by the gland which leads to a release of histamine.

Attacks can be prevented by taking antihistamines or coating the skin with oil, the physicians said.

Eye, Hand Dominance Sometimes Opposite

A large number of persons have opposite eye and hand dominance, according to Kenneth N. Ogle, Ph.D., Rochester, Minnesota.

There are too many exceptions to say that right-handed persons normally have dominance of the right eye and left-handed persons, of the left eye, he wrote in the question-and-answer section of the current Journal of the American Medical Association.

At one time some psychologists felt that opposite dominance was a basis for speech and reading difficulties, Dr. Ogle said, but there are many persons with opposite dominance who are "normal in every respect."

"No reason is known for this opposite type of dominance," he added. "In some instances, no doubt, parents have tried to train the right hand to be dominant without considering eye dominance."

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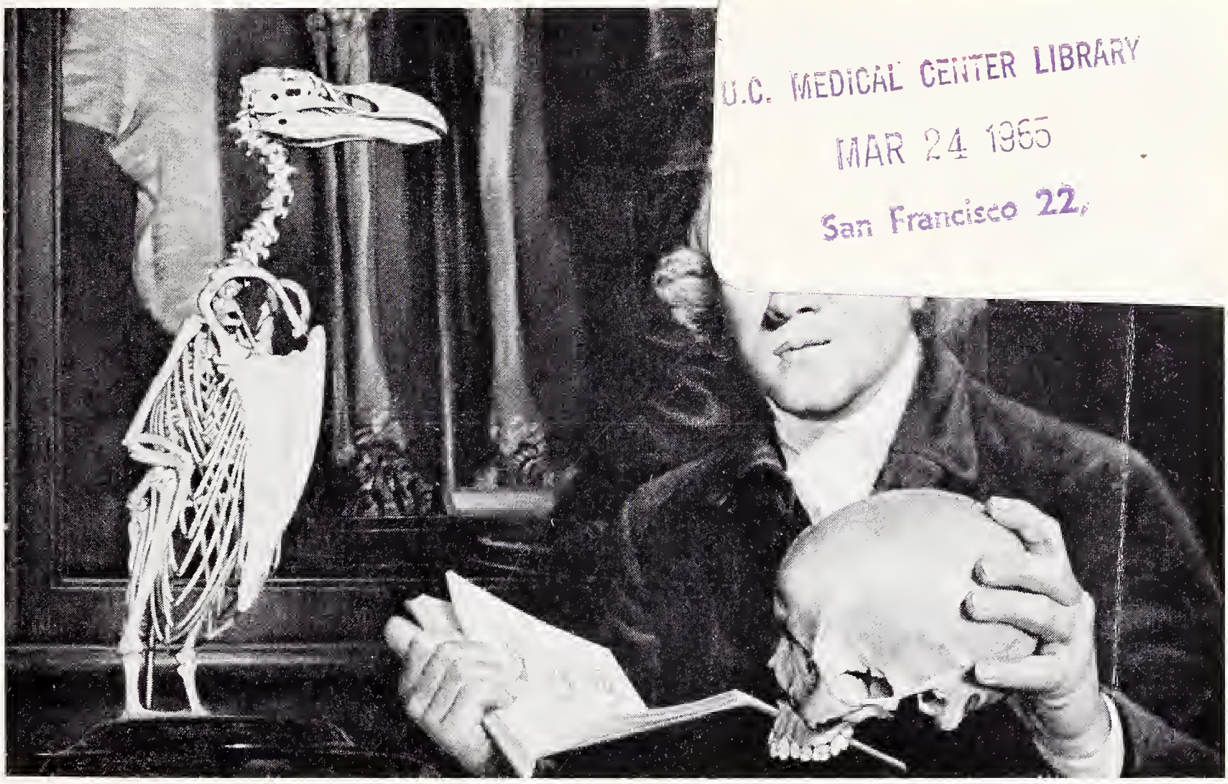

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*Lennox, W. G.: Epilepsy and Related Disorders, Boston, Little, Brown and Company, 1960, vol. 2, p. 865. 43264

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Connecticut Medicine

editorials

Epidemiologic Puzzles Of The Common Cold

The viruses which attack predominantly the nose and throat are of very different sorts in their chemical composition, size and other properties. Some are myxoviruses which are large RNA with lipid containing outer membranes. Some are influenza viruses of various types; para-influenza viruses which affect children mostly but also cause "common colds" in adults; a respiratory syncytial virus which causes bronchopneumonia in small children; rhinoviruses, the commonest group, of which there are forty to fifty types; adenoviruses of which thirty types affect man. Then there are a large number of common colds and minor infections from which no causative agent has yet been isolated.[1] With such a vast array of known and unknown agents that cause colds, it is not surprising that investigators are faced with many epidemiological puzzles.

At first sight epidemiology of the common cold seems deceptively simple. Inflammation of the mucus membrane produces fluid, mucus, cough, sneeze, and spread of the infection to others. Why are colds prevalent in winter months—"resistance" is lower, crowding is greater. Why then is it that at most only ten per cent of those exposed to cold sufferers had picked up the infection? Why is it that even within a household the chance of catching a cold from an infected relative is only one in five? Why is it that analysis of colds among office workers failed in a majority of instances to trace a likely source of infection from anothers cold? Why is it that waves of colds occur simultaneously in different parts of a country in a way which makes person to person spread inconceivable as a full explanation? This occurs not only in man but also in pigs, where simultaneous occurence of influenza at different farms was observed following changes in weather.

If these aren't enough puzzles, there are still others. In 1957 Asian influenza spread swiftly and unhindered through many tropical countries, but remained dormant in temperate zones until the summer was over. Why are some viruses such as adenovirus and Coxsackie A21 constant sources of trouble in camps of service recruits and yet fairly harmless in the population in general? Why do rhinoviruses cause outbreaks of colds early in the winter and myxoviruses including influenza usually stay quiet until the New Year? One cannot deny that colds can be "caught," nevertheless their infectivity is low and other factors have to be considered.

One idea is that even though a person recovers from a viral infection and develops potent antibodies against it as happens with influenza A, that either the virus changes its antigenicity and/or that because of the innumerable strains of virus one can get over one infection only to be attacked by another. In such instances repeated colds may be due to many different viruses. Another idea advanced by Andrewes is that besides specific immunity to each virus some kind of non-specific immunity from interferon, a defensive protein inside of cells can be stimulated by damaged virus or by viral nucleoproteins and once produced, remains effective

THE COVER

HUNTER: SCIENTIFIC SURGERY BEGINS

FROM an untutored Scottish country boy, John Hunter (1728-1793) became eighteenth-century London's foremost surgeon and medical scientist. Combining natural talent, insatiable curiosity, and keen observation, he was one of the greatest comparative anatomists of all time. The skeletons of the now-extinct Great Auk and of the Irish Giant are two of 13,682 specimens which comprised his famous collections, war-spared remnants of which are in London's Royal College of Surgeons. Posthumously, Dr. Hunter was honored as "The Founder of Scientific Surgery."

also against other viruses than the one which elicited it.[2]

Common experience tells us that colds and other respiratory infections are much commoner in the colder months of the year. A first wave often comes in October with the onset of cooler weather, another in the New Year and another still in March. Many infectious diseases do have a preferred seasonal incidence. Possible explanations for a predilection for winter might be that in colder weather transfer of the infection is facilitated. In addition, factors that affect the host response may also operate. Facilitation of transfer has been carefully scrutinized as well as the problem of virus survival in the atmosphere during different temperatures and humidity without evidence for this factor as being important.

It is therefore necessary to look for effect of season on host-susceptibility. Experiments with chilling alone produced no colds except perhaps in women in the middle of the menstrual period. This latter observation suggests however that chilling might produce an effect in a person in a state of "balanced equilibrium" with a respiratory virus by tilting the balance in favor of the virus. This was observed in recruits at the Great Lakes Naval Training Station who were physically exhausted by their training and also exposed to too many inoculations on their arrival.[3] Both physical exhaustion and too many inoculations temporarily increased the liability to respiratory illness. Experimentally Shope was able to provoke open respiratory infections in swine from the latent form by infecting them with killed hemophilus vaccines, playing on the pigs with a hose or injecting calcium chloride into their pleural cavity.[4]

From what we know of the epidemiology of the common cold we would suppose that the chain of events leading to them might perhaps be broken in one of three ways. We might try to interfere with the spread of the viruses. But there are serious difficulties. We do know that preventing the recirculation of viruses might be effective, for these infections are known to die out among polar explorers and other small isolated groups.[1] But in our society proceeding along such lines is clearly impracticable. Experience with the use of chemical aerosols or ultraviolet irradiation has so far been very discouraging.[1] Furthermore, too many infectious agents are exchanged at close range so that no means of destroying them in their brief passage through the air would offer hope for success.

Specific prophylaxis by the administration of vaccines is quite hopeful in certain circumstances, such as protection of recruits against adenoviruses, of young children against the parainfluenza viruses and of large groups against epidemic influenza. But what can one do against the rhinoviruses which have so many different serotypes that an effective polyvalent vaccine against them all is almost impossible to attain. Much of our fight against the common cold might be solved if we had a method of effectively stimulating interferon production to increase non-specific immunity.

We could of course seek to avoid certain stresses by migrating to an agreeable climate, by getting enough rest, sleep and avoiding undue fatigue. But much further research is necessary into the ways in which various stresses operate to increase susceptibility or upset a host-parasite equilibrium. One effective stress is probably associated with some meteorological change to which the body does not adjust itself sufficiently quickly. But there are other provoking factors as noted above in Shope's experiments. Since various stresses operate unequally especially in respiratory virus infections in man which have different seasonal prevalences and behave differently in other ways, it seems unlikely that we will find in all infections any common factor upsetting endocrine or other balancing mechanisms.

L.H.N.

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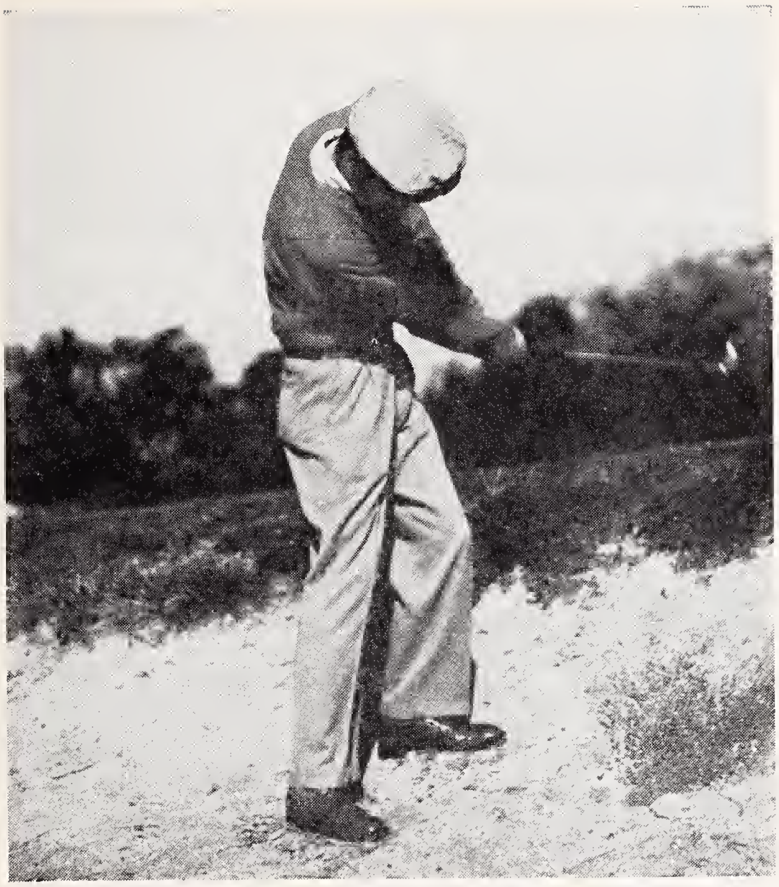
Nuclear Medicine: Scintiscanning

> *Medical Disease has not changed. It is we who have changed as we learn to recognize what was formerly imperceptible.*—Charcot

The application of the radio nuclides to basic and clinical research has been widespread and their use in clinical medicine has touched all the specialties in the field. Radio phosphorus P^{32} was first used in 1939 to administer whole body x-irradiation in the treatment of certain blood diseases. From 1950-1953 the number of available radioisotopes grew to include radioiodine (I^{131}), radiogold



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(Warning: Codeine may be habit-forming.) **Indications:** 'Soma' Compound and 'Soma' Compound with Codeine are useful for relief of pain and stiffness in traumatic, rheumatic and other conditions affecting muscles and joints. **Contraindications:** Allergic or idiosyncratic reactions to carisoprodol, phenacetin, or codeine phosphate. **Precautions:** *Phenacetin*—With long-term use, give cautiously to patients with anemia and cardiac, pulmonary, renal or hepatic disease. May damage the kidneys when used in large amounts or for long periods. *Caffeine*—Not recommended for persons extremely sensitive to its CNS stimulating action. *Codeine phosphate*—Use with caution in addiction-prone individuals. *Carisoprodol*—Carisoprodol, like other central nervous system depressants, should be used with caution in patients with known propensity for taking excessive quantities of drugs and in patients with known sensitivity to compounds of similar chemical structure, e.g. meprobamate. **Side effects:** Drowsiness, lightheadedness, dizziness, and gastric complaints have been reported infrequently for either or both of these preparations. *Phenacetin*—Side effects are extremely rare with short-term use of recommended doses. Prolonged ingestion of overdoses may produce dyspnea, cyanosis, hemolytic anemia, skin rash, anorexia, subnormal temperature, insomnia, headache, mental disturbances, and tolerance. *Caffeine*—Side effects are almost always the result of overdosage. Average doses may rarely cause nausea, nervousness, insomnia, and diuresis. Excessive dosage may produce, in addition, restlessness, nervousness, tolerance, tinnitus, tremors, scintillating scotomata, tachycardia, and cardiac arrhythmias. *Codeine phosphate*—Possible side effects are nausea, vomiting, constipation, and miosis. *Carisoprodol*—The only side effect reported with any frequency is sleepiness, usually on higher than recommended doses. An occasional patient may not tolerate carisoprodol because of an individual reaction, such as a sensation of weakness. Other rarely observed reactions have included dizziness, ataxia, tremor, agitation, irritability, headache, increase in eosinophil count, flushing of face, and gastrointestinal symptoms. One instance each of pancytopenia and leukopenia, occurring when carisoprodol was administered with other drugs, has been reported, as has an instance of fixed drug eruption with carisoprodol and subsequent cross-reaction to meprobamate. Rare allergic reactions, usually mild, have included one case each of anaphylactoid reaction with mild shock and angioneurotic edema with respiratory difficulty, both reversed with appropriate therapy. In cases of allergic or hypersensitivity reaction, carisoprodol should be discontinued and appropriate therapy initiated. Suicidal attempts may produce coma and/or mild shock and respiratory depression. **Dosage:** Usual adult dosage of 'Soma' Compound or 'Soma' Compound with Codeine is one or two tablets three times daily and at bedtime. **Supplied:** 'Soma' Compound, orange tablets, each containing carisoprodol 200 mg., phenacetin 160 mg., and caffeine 32 mg. 'Soma' Compound with Codeine, white capsule-shaped tablets, each containing carisoprodol 200 mg., phenacetin 160 mg., caffeine 32 mg., and codeine phosphate 16 mg. Narcotic order form required. *Before prescribing, consult package circular.*

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(AU^{198}), radioiron (Fe^{32} or Fe^{59}), as well as P^{32}. The first radioisotopes were produced by bombardment with artificially accelerated particles in the cyclotron and at this time the simple Geiger-Mueller tube and the plain binary scale were perfectly adequate to detect the radiation. It soon became obvious however to the user, that he needed not only more sensitive detectors but more sophisticated instruments. At the time the pharmaceutical manufacturer was busily preparing new radionuclides for his use. They obtain irradiated material from the nuclear reactor, assay, purify, package and distribute them.

To propertly use the new isotopes adequate instrumentation had to be developed, for otherwise, the use of this new diagnostic modality could not expand. Gradually there has been an evolution of instruments and growth of qualified instrument manufacturers. Now there are in existance a variety of instruments for almost any application that may be desired. There are scintillation detectors from the very large ones to those encased in the end of a needle. Magnetic tape recording of the read-out data is becoming more widespread. There are now complete systems for counting low-level activity of the beta-emitting isotopes as well as for position and coincidence counting, and also liquid scintillation systems. There are transistorized modular constructors which gives the small size often needed and to some degree makes each user his own serviceman.[1]

The first scintiscanner was fashioned in 1950 consisting of a detector which can move in a predetermined pattern in synchronization with a recording mechanism. It was the work of Sam Geiger an M.D., Ted Soff, a physicist and Ed Flamm, a machinist, all working at the Hahnemann Medical College and Hospital. The scan consisted of a series of dots that gave a gross estimate of the distribution of the radioisotope beneath the detector. Then improvements were made in the read-out system in the form of photographic dot recording.

The current requirement of the physician is to be able to scan more quickly not only to save time for himself, but also so that he may examine more patients with available equipment and with less discomfort to the acutely ill patient. In addition there is the need to be able to view the accumulation of an isotope within an area of the body on a serial basis perhaps every few minutes. Such an instrument is known as a digital auto-fluoroscope. The detector assembly contains a mosaic of two hundred and ninety-four two-inch thick sodium iodide crystals arranged in a rectangular array of fourteen rows with twenty-one crystals. Each of the crystals is optically coupled to two leucite pipes. Twenty-one light pipes from any horizontal row of crystals are coupled to one photomultiplier tube and fourteen light pipes from any vertical row of crystals to another photo tube. This means that pulses occurring simultaneously in any one of the fourteen horizontal position phototubes and in any one of the twenty-one vertical positioning phototubes will identify the crystal in which the interaction has occurred. Data presentation will be on an oscilloscope with continuous visualization permitting motion picture recording and magnetic tape storage.[1]

Besides scanning the thyroid gland with the use of I^{131}, other organs are being studied. The brain is being scanned by radiomercury labelled neohydrin.[2] Snyder and Dooley[3] have reported on the usefulness of this substance in the diagnostic management of patients with intracranial disease. Of sixty-four patients scanned, seven were abnormal and all seven were shown to have primary brain tumors. An extradural hematoma was identified in one patient. Several were missed however, this proving the adage that a test is not a doctor. Although the procedure is safe and accurate, the physician must continue to use all his diagnostic skills or those of qualified consultants if the brain scan is negative.

Blau and Bender have reported the use of Se^{75} selemethionine for visualization of the pancreas by isotope scanning. It is based upon the theory that physiological amino acids are the substratum for the pancreatic synthesis of the digestive enzymes. The amino acid contains sulphur in its molecule and selenium being similar to sulphur can replace it in the methionine molecule without changing the properties of the amino acid. It is this substitution of selenium for sulphur which has made Se^{75} methionine the preferred substance for pancreatic scanning[5,6] and especially the recognition of carcinoma of the pancreas.

We have every reason to believe that the field of nuclear medicine will continue to make progress at the fantastically fast rate it has shown over the past year and we may expect practically all organs to come to visualization by this type of technique.

L.H.N.

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The Angiotensin Infusion Test For Renovascular Hypertension

There are two removable causes for hypertension, one pheochromocytoma and the other, renal artery stenosis. The first can be detected by the amount of catechol amines excreted in the urine. The second can also be detected particularly by renal angiography. However, even when renal angiography demonstrate the existence of renal artery stenosis, it is still not certain that it is the cause of the existing hypertension. There are many patients in whom lesions are demonstrated by arteriography but in some of these the arterial pressure is normal, and in others the vascular lesions are not the cause of the patient's hypertension, possibly because a substantial narrowing of the vascular lumen is necessary before renal ischemia occurs.[1,2]

At present there is no available procedure for routine clinical use that can distinguish between the patients with renal artery lesions that are the cause of the hypertension, from those with lesions that are apparently not causally related to the existing hypertension and in whom such surgery would be valueless. To document this Kaplan[3] mentions four cases in whom surgery on a narrowed renal artery did not cure the hypertension. If there was a safe and simple screening procedure to separate the renovascular hypertensive patient, then the physician would be free to go into more complicated tests, such as renal angiography.

At present all tests have their positive as well as their negative aspects: intravenous pyelography, radio-renography, rapid sequence pyelography, split function tests to demonstrate functionally important renovascular disease, may be altogether misleading.[3] Since the hypertension occurring in renal ischemia is thought to be caused by increased production of renin by the juxtaglomerular cells, another approach might be to assay the arterial blood for angiotensin. But this test is technically difficult and has not succeeded in separating the patient with reno-vascular disease from those with other causes of hypertension unless one can obtain renal venous blood.

Kaplan and Silah[3] have approached this problem by making an assumption: that a patient with endogenous angiotensin will require a greater amount of injected angiotensin to obtain a given pressor response, than will the patient who has no endogenous angiotensin. The latter patient should show a rise in blood pressure with injected angiotensin, while the former should show little response. If the patient shows little or no response to injected angiotensin, then he is resistent to it and it should follow from the assumption that he already has a considerable amount of angiotensin in the blood, that is, such a patient has renovascular hypertension. Accordingly the authors tested one hundred seventy-two patients with various types of hypertension and twenty-five normotensives. They infused a single dose of 4 millimicrog. per Kg. in one minute and recorded the rise in arterial pressure. The presence of a positive response—that is a rise in diastolic pressure of 20 mm Hg. with less than 5.0 millimicrog. of angiotension per Kg. of body weight per minute indicated that reno-vascular disease was not the cause of the hypertension even if present.

The authors point to certain precautions which when observed should prove the test to be a useful clinical tool. If secondary aldosteronism is caused by depletion of plasma volume by salt restriction or diuretic therapy, heart failure or cirrhosis, then such a patient will be resistant to angiotensin presumably because their endogenous levels of angiotensin will be elevated. However, such resistence to angiotensin infusion can be reversed by saline infusion. Furthermore, patients with accelerated hypertension may be, and patients with malignant hypertension will be resistent because the hyperplastic and necrotizing renal arteriosclerosis itself leads to ischemia and increased endogenous levels of angiotensin. Finally, they found one non-diuretic drug, the mood elevator amitriptyline hydrochloride (Elavil) that interferes and there may be others not yet recognized. Accordingly they suggest the test should be repeated in resistant patients after discontinuance of all medications.

In the above special situations a positive pressor response to angiotensin infusion should serve as evidence against the presence of a renal vascular cause for the hypertension. Of particular significance is the observation that patients with renovascular lesions that are not the cause of existing hypertension can be recognized because they are responsive to the pressor action of angiotensin. The reason why some patients with renal arterial lesions, demonstrated by arteriography have hypertension from other causes is not clear. Can it be that the critical point of narrowing to cause renal ischemia has not been reached? The fact is that until the angiotensin test was studied by Kaplan and Silah, there has been no available procedure for routine chemical use which could distinguish the patient with renovascular disease in whom renovascular surgery should be considered, from those with lesions that are apparently not causally related to

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the hypertension and in whom such surgery would be contraindicated. Now in the angiotensin infusion test this differentiation has become possible.

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Basic Science And Its Practical Usefulness In Problems Of Hearing

An especially important area where science will continue to be the servant of progress is medicine. In each area we find rapid basic science advance as well as practical application. Against such formidable enemies as cancer and cardiovascular disease, multiple small victories have lessened this menace. In such an apparently "hermetically sealed" area as otolaryngology we find both important dramatic practical consequences of medical research such as the introduction of ultrasound in treating Meniere's disease and remarkable basic science contributions as presented in a symposium on hearing in the October 16th issue of Science.[1]

The introduction of ultrasound in the treatment of Meniere's disease is especially welcome since there appears to be an increasing number of patients suffering from this distressing and disabling illness without any improvement in its therapy. Why there is a rising incidence of this disease, is not established although there is some evidence that stress and strain of everyday affairs may contribute to its production. Until now, many patients could not be kept free of bouts of vertigo perhaps because of our poor understanding of the cause and development of symptoms. And so we find patients with attacks so severe that they become completely incapacitated. The only treatment which provided effective palliation was surgical destruction of the inner ear and resulting total deafness, a very great price indeed to pay for freedom from dizziness. But what to do in those cases in which Meniere's disease occurs bilaterally?

The practical value of ultrasound in treating Meniere's disease has been known since 1952 when it was introduced in Europe. The principle involves the use of focused ultrasound beamed through a surgically thinned-down wall of the horizontal semicircular canal into the vestibule of the inner ear. Then the portion of the inner ear which is responsible for attacks of vertigo is selectively destroyed. At the same time the cochlea is preserved and so is hearing. As might be expected, many difficulties were encountered with the introduction of ultrasonic therapy which were only overcome after extensive experimentation and technical improvements. Finally, it became a safe and reliable procedure. At present a new and technically reliable ultrasonic generator became available and the technique of its use developed at Columbia Presbyterian Medical Center.[2] A skilled operator will not find the device difficult to use. The results reported are very reassuring as regards the incidence of cure. They report that the danger of facial nerve paresis is less than five per cent and when it occurs it is temporary and disappears in a few weeks without additional treatment. To date the authors treated sixty-five patients and in eighty per cent, the patients were relieved of their symptoms completely.

When it comes to basic science in the study of hearing the following titles at a symposium on hearing at a meeting of the National Academy of Science gives us an idea of what is taking place in this field.

1. Nerve and Nucleus: a study of stimulus coding in the initial stages of the auditory nervous system.
2. Responses of Neurones in the Cochlear Nucleus to tones and noise of long duration.
3. Descending activity in the auditory system.
4. Functional characteristic of Neurones in the medical bodies of the cat and rabbit.
5. Subjective lateral inhibition as a method of investigating sensory activity of the ear, the skin and the taste nerves.
6. Some effects of binaural stimulation on the activity of single neurons in the inferior colliculus of the cat.
7. Some discharge characteristics of single neurones in cat auditory cortex.
8. The contingent negative variation: An electrocortical sign of significant association in the human brain.
9. Some properties of the slow cortical response in humans.
10. Components of the complex response evoked from the auditory cortex of unanesthetized cat.
11. Activity of neural units in the auditory area of the cerebellum of decerebrate cats.

When something practical will come out of studies of this kind cannot be predicted. But that they will is a virtual certainty. As medical research continues to improve our basic understanding of biological processes, there is a guaranty of future benefits for all.

L.H.N.

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A New Science Of Learning: Programmed Instruction

Knowledge in medical science is mounting rapidly, but the science of learning has grown all too slowly. Accordingly, we are faced with a number of problems in medical education today: selecting specific material to teach from the growing body of medical knowledge; an increasing number of students to teach; a shortage of faculty members to take up the task of instruction; the growing awareness of the need for continuing education throughout the professional career of each physician, and finally is the daily task of making more effective and more efficient our teaching with our present knowledge and our present students. Perhaps this is the reason why Skinner's[1] announcement of this successful use of programmed instruction (P.I.) has created so much excitement.

Skinner, the inventor of programmed instruction reportedly first developed his teaching technique on the basis of a bet that he could teach pigeons to bowl! He won the bet and his principles applied to pigeons remain the basis of effective programmed instruction, (P.I.). The theoretical base of P.I. lies in the stimulus response theory of learning. He believes that anything can be learned if it is broken into small enough steps. The pigeon makes several movements to push a small bowling ball with the beak. As the pigeon makes each required movement he is rewarded until step by step he pushes the ball. This breakdown of tasks into small minute steps and the "reward" or "reinforcement" of activities or responses which are in the direction of the desired response is the basis of P.I.

With humans the problem is in many ways far simpler than with the pigeon for the human can react to and actively participate in the learning process as occurs during a question and answer period. Programmers call this "involvement" and maintain that this participation in the learning process is one of the keys to successful P.I. Skinner arranged learning materials according to a theoretical model of learning and then tested the materials upon a group of students by means of a mechanical contrivance without the presence of a huma teacher and found a high rate of achievement. Th student learned not simply by making a respons but only if the response was correct could he procee to the next step. This feed-back has the psych logical effect of reinforcing or rewarding corre learning behavior and of extinguishing or reducin incorrect learning behavior. It is the immedia knowledge of the result and the rewarding effect c the feedback that tends to have a posititve mot vating effect on the student.

The learner is the central focus of this type c instruction since he controls the rate of learnin In addition, his responses become a part of th instructional material. This permits the teacher wh must draw up the instructional material to modif the program pragmatically in accordance with th results obtained in students to whom the program i offered. By going over the student responses it i possible to identify those areas of the program tha are effective or ineffective and this introduces exper mentation into the curriculum and makes th learning process more rational. Because the subje matter within a program must be broken dow into small logically sequential steps, it forces clarit and fixes attention on key points. The smaller th steps, the fewer are the errors and the more rapi is the acquisition of knowledge. The method pe mits closely controlled research, and error-fre efficient learning may ultimately be achieve through the logical manipulation of learnin variables contained within the medium of P.I.

The student is actively engaged at each step i the instructional sequence and passivity is in possible. Active responding not only enhances lear ing but also has a positive effect on retention. A the student is integrated into the learning proces his involvement in it increases, his motivation i enhanced and he is stimulated to assume respo sibility for his own learning behavior. We hav known that students differ markedly in their spee of acquiring knowledge and there has always bee a need for some way of individualizing the pac of the learning experience. With P.I. a high achiev ment can be obtained by most students, both th "fast" and the "slow" learners.

The rate of development of programmed lear ing in the last ten years[2] is astounding. Blyth reported that the technique had a highly motivatin effect on his students in College Logic. It eve improved subsequent conventional learning expe ience. It has spread to involve over seventy-five con mercially available college level programs in man subjects. There are now fifteen medical schoo using some programmed sequences and thirty-fiv schools have initiated investigations and pil studies.[2] Commercial publishers are offering

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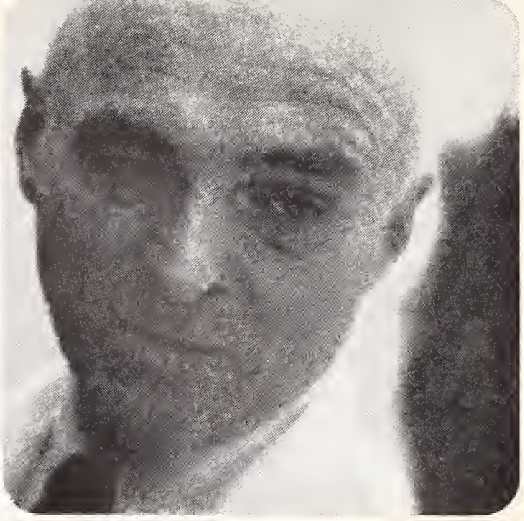
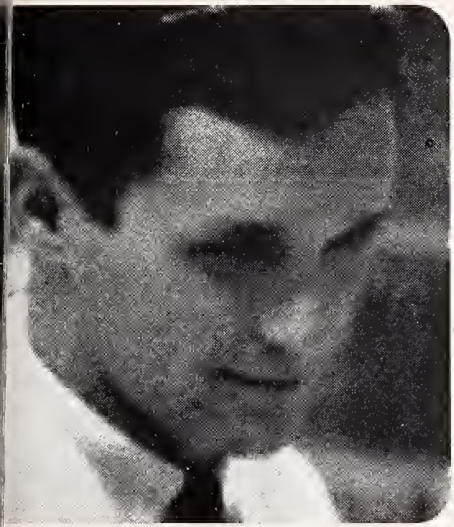


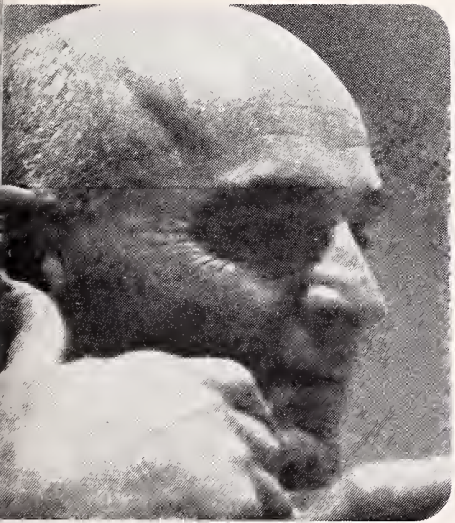
Mrs. Jones?



sir. She's down to 140/85.

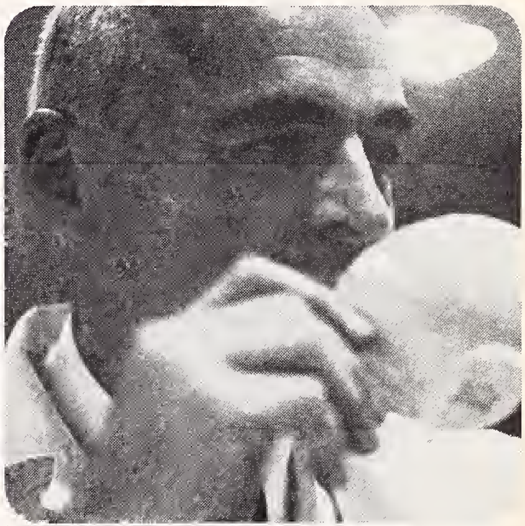
Right. When we started, she was 195/120.

Is that Regroton again?



it for all my hypertensives.

Does Regroton always work this well?



Not always. But the exception proves the rule.

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*Chupkovich, V.; Finnerty, F. A., Jr., and Kakaviatos, N.: The value of chlorthalidone plus reserpine in moderately severe and severe hypertension: A two year study. Presented at the 7th Inter-American Congress of Cardiology, Montreal, June 14–19, 1964.

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rapidly increasing number of programs in a variety of subjects within medical colleges. At Dartmouth an experimental program was developed in parasitology and the programmed students scored significantly higher in the final test with greater efficiency in learning than the students learning the same subject by conventional means. The same result is reported from Western Reserve in programmed teaching of portions of hematology. A similar result is reported by Nebraska is programmed teaching in basic psychopathology. Here other advantages became manifest such as economy of student time and student preference for the individualized use of the material.[5]

As far as the teacher is concerned, programmed instruction has benefitted him enormously. The young instructor who spends much of his time in research must develop his teaching skills through trial and error. If he should be obliged to organize his teaching by programmed instruction, he will himself be obliged to develop a working command of basic concepts and principles, and as Blyth points out, he will be able to cover more material than ever before.[3] He will develop operational goals for instruction. He will now have students experiencing the learning and motivational effects of the programmed sequence. He will have students better prepared and better focused to discuss the critical aspects of the learning experience. The teacher released from the more prosaic types of instruction is free to get at what is the heart of the material to be learned, and he can revise and evaluate the P.I. in terms of the student and his achievement.

As one director of instruction put it, "any teacher who has done some programming will be a more effective teacher, whether he later uses the program or not." Any instructor, in short, who has programmed his material for use by his students, can then use the insights he has himself obtained to make his lectures as effective as is the program in attaining student achievement. In short, by utilizing P.I. the teacher benefits and there is improved achievement by the student.

We can see that P.I. enhances motivation, forces personal participation on the part of the learner and allows for differing rates of speed in learning. There is every indication that there can result positive benefits for the medical curriculum, to medical students and to the individual instructors. What will it do for the life-long education of the practicing physician? Can this method become a basic part of a "University Without Walls?"[7] There is room here for more research to be done and finer controls and research paradigms to be employed. But clearly the busy physician in the last analysis must rely greatly on a process of self-instruction through a learning program. P.I. may turn out to be of great importance towards achieving this indispensable goal.

L.H.N.

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Treating The Patient As Well As His Disease: A Lesson From Chronic Anticoagulant Therapy

Physicians know that the question of the long-term efficacy of anticoagulant therapy in patients that have recovered from acute myocardial infarction is not yet settled. They also know that this treatment does not provide benefits which are immediately apparent to the patient or his physician, in contrast to the effects of insulin on blood sugar or digitalis in a failing heart. Thus the physician who treats a patient with anticoagulant drugs cannot really measure its successes, although he is invariably reminded of its failures in the form of either inadequate rise in prothrombin times on the one hand, or in minor or serious hemorrhage on the other. The physician accordingly can find himself in an ambivalent position. He may be skeptical about the value of the drug and yet be unwilling to withhold a possibly useful drug. He realizes its dangers in hemorrhage and wonders whether he is violating the dictum "primum non nocere." This may give rise to a potential uneasiness in the relationship between physician and patient in which he must deal with his own anxieties and also those of his patient.

Although the patient worries about recurrence of his illness, the physician cannot promise that anticoagulant therapy will prevent it. If a patient is anxious about discontinuance of the drug so is the physician since there is no agreement on the optimal period for treatment. The difficult task of the doctor may engender anxiety which is easily transmitted to his patient. The patient's fears may not be increased unduly and yet the physician has to establish sufficiently stringent rules that the patient must follow for his own welfare. He must offer hope but not support false hopes. He must reassure the patient but not allow himself or his patient to become incautious. It is concerns of this kind that produce emotional stress which may also explain much of the continuing ambivalence that many physicians are beginning to express towards anticoagulant therapy over and above the uncertainties regarding efficacy of the drug.

How does the patient perceive prolonged anticoagulant therapy. A recent report by Moore[1] has included certain psychological factors among the various pitfalls in anticoagulant therapy, particularly the patient's tendancies towards a magical dependence upon the treatment. Kravitz and Thomas[2] have also studied the emotional reactions among forty patients kept on long-term anticoagulant therapy. Some patients observed in this review tended to perceive the drug as having near-magical properties and reacted to it superstitiously. "It will give them a new heart or they will live forever." In that case, varying the dosage represents a worsening of their condition and some feared increases of dose "lest it kill them." The necessity of frequent visits and blood tests inherent in this form of therapy also kept before them the image of danger of the drug and the seriousness of the disease that was being treated. In short, some patients were frightened of the drug and equally frightened to discontinue it.

The authors also had an opportunity to study the patients reaction to the basic illness and not just to its therapy. Patients realized they have a chronic illness and recurrent visits, blood tests, and examinations prevented them from the tendency found among most patients to try to deny or "forget" their recently survived crisis. This is a psychologically stressful situation and patients handle it in various ways depending upon their premorbid personality structure. The anticoagulant drug helps them to displace their concern about their heart disease onto their drug. Some thought it made them an invalid or impotent, an obvious psychobiological displacement. Some merely harbored considerable anxiety or depression covered by a facade. Before their illness some overcame it by muscular activity which is now denied them, lest it pose a danger to their heart. Obviously such a person might need psychotherapy as well as medical therapy and Kravitz quotes an instance in which this combination led to a diminution of anxiety, increased cooperation with treatment, and regained ability to work and take better care of himself.

It is clear that the physician who treats a patient with anticoagulant therapy must be alert not only for hemorrhagic but also for emotional complications. To be sure emotional responses are not always easy to detect because patients acquire defensive mechanisms to minimize their anxieties, they displace, project and deny so as to diminish any self-awareness of painful feelings. The patients not only hide from their doctors, but also from themselves. Of course a certain amount of denial is normal and is indeed a necessary ingredient of adjustment to chronic illness. But excessive denial can be potentially damaging, for in such instances the patient is not taking care of himself adequately. Clearly awareness and sensitivity on the part of the physician are required for recognition and management of these reactions. Disease involving the heart is itself a terrifying experience and any compromise in cardiac function tends to produce either overt anxiety or defensive mechanisms the purpose of which is to ward off anxiety.

Varying degrees of personality alteration occur in virtually all patients who have had a heart attack and the physician must be careful not to assume too readily that it is solely the anticoagulant therapy which is causing the patient's anxiety. The alert and sympathetic internist finds his great challenge in treating patients with heart disease. If a patient experiences a feeling of considerable security when they are taking the drug then this therapy appears valuable since their physician is willing to use it despite obvious risks.

There is of course also a non-specific aspect to the observed emotional responses. Long-term treatment with any potentially dangerous drug might produce similar reactions in some patients. For example, chemotherapeutic drugs for cancer, suppressive steroid therapy for a variety of disease states.

Certain consequences from Kravitz's study need emphasis. The physician who reveals his inner conflicts about the efficacy as well as the hazards of anticoagulant therapy needs to realize that his patients will react to his ambivalence with an increase in their own anxiety. Thus the physician must first recognize and deal with his own concern about the treatment and separate them from the reaction of his patients to such treatment.

The physician moreover must be constantly on the alert for shifts in his patients' attitudes towards himself, his doctor, his illness, his medication, his family and towards his work. These changes may be expressed subtly and the physician who recognizes and explores these "seemingly" minor

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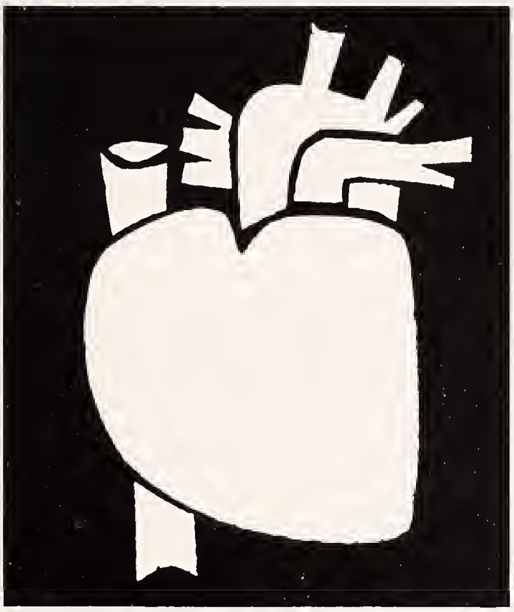

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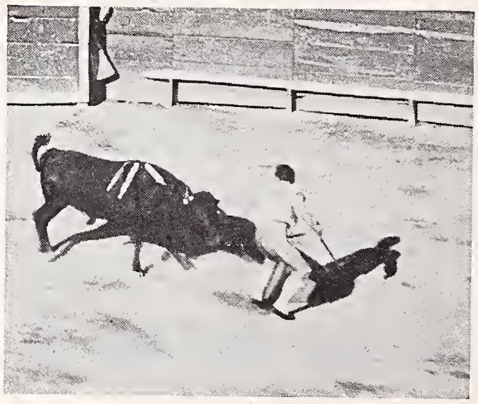

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changes will often be rewarded with far greater candor from his patient and will inevitably gain better insight into his patient's need.

Then there will be times when the therapy will be discontinued for whatever reason. At this time it becomes important to make certain that the patient does not interpret this as a loss of protection. We know that many patients depend heavily on their periodic visits and periodic blood testing and to stop these visits suddenly may induce in them considerable anxiety and even depression. It follows that patients should be forewarned and prepared for impending termination of therapy and in fact should be seen for some time after they have finished the use of the anticoagulant drug.

There are also a few other patients who may be unsuitable for therapy aside from frank phychosis, progressive senility and obvious contra-indications to anticoagulant therapy. These are the ones who have an excessive need to deny any disability whatsoever as well as those with an unmanageable level of anxiety in response to the treatment. These are relatively rare and may achieve sufficient resolution of their conflicts through brief periods of psychotherapy. Then they can continue with anticoagulation therapy.

What Kravitz has brought into focus is that treating a disease is not enough, for we deal with a sick human being both physically and psychologically. As physicians, we must deal with the therapy, itself, with the patients concern about the therapy and also with our own concerns.

L.H.N.

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Mutual Medical Dental Problems: Fluoridation Of Water Supply

Connecticut has prepared legislation that fluoridation be mandatory for water supplies serving ten thousand or more persons. This measure is at present on its way through various state public health and legislative channels. (See Dr. Foote's statement, page 172). If the law should pass, the engineering phases of fluoridation are well enough understood to permit easy application within approved safety limits for accuracy. The costs continue to be reported at between five and fifteen cents per person per year and these costs are far below those of any other type of fluoride program.

There are acceptable though scantily tested alternatives to water fluoridation at considerably increased cost and reduced practicality. These measures include programs using fluoride tablets and solutions, addition of fluoride to foods and topical treatment of teeth with concentrated fluoride solutions. Aside from the increased cost, it is obvious that such measures will reach but a small proportion of our population.

There are now forty-six million persons in this country drinking fluoridated water and another seven million living in communities with natural fluorides of optimum or greater concentration in their drinking water and in 1965 an additional eight and one-half million will be added when New York City fluoridates its water supply. So that we are now in a position to study the effect of water fluoridation on dental caries by comparing populations that drink fluoridated water with those that don't. Of those that don't drink fluoridated water, ninety-nine per cent of the population gives some evidence of dental caries upon reaching adulthood. The average child in Massachusetts at age fourteen has already lost one tooth from dental caries and has four teeth filled and seven others in need of filling.[1] In short, half of the permanent dentition of these children has been damaged and less than half that needed dental restorative treatment have had it performed.

Aside from fluoride therapy, the common preventive measures for dental caries include tooth brushing and diet. Nevertheless, there is little evidence that they have resulted in important reduction in caries under test conditions and there is considerable evidence that over the years these measures have failed to prevent an increase in dental caries experience in large population groups. Somewhat better evidence exists for the beneficial effect of restriction of carbohydrate in the diet, but again large population groups have failed to make use of this measure and may be expected not to in the future.

In the meanwhile, fluoridation has produced massive evidence of large reductions in dental caries in large populations. We may define fluoridation as the adjustment of a water supply to a fluoride content at which a reduction of fifty to seventy per cent in dental caries will occur without damage to teeth and other structures. In this climate the optimum content is one part per million (1 mg. per liter).[2] Newburgh, New York, after fifteen years of fluoridation shows a reduction of seventy per cent in dental caries experience as compared to Kington, New York, among children thirteen to fourteen years of age, and a reduction of ninety per cent in numbers of missing teeth per child. There are many similar studies in all communities where fluoridation was in effect, so that there is no longer any reason to doubt the fact that adjustments of a community water supply to optimum fluoride concentration greatly reduces dental caries, an observation long known to occur in populations that drink naturally fluoridated water.

The mechanism by which fluoride acts is considered to be chiefly a replacement of hydroxyapatite by the less soluble fluorapatite in the crystalline structure of tooth enamel.[3,4] Possible additional mechanisms are indicated by the fact that fluorine favors the prepitation of calcium phosphate from saturated solutions and that it inhibits some and stimulates other enzyme action. Catalytic action upon enamel crystallization may also be involved. There is also a higher concentration of fluoride in bacterial placques close to the tooth surface which permits local reactions not typical of the concentration of fluoride in saliva or other body fluids, thereby reinforcing the fluoride in the tooth enamel.

When fluoridated water is ingested there is rapid absorption of over ninety per cent of soluble fluoride, of which half appears in the urine and the rest is stored in bone and teeth. No fluoride is stored in soft tissues. The urine excretion is prompt and responds in sensitive fashion to low doses. As age advances gradual accumulation of fluoride does occur in bone, both in communities with natural fluoride in water as well as in fluoridated water. A slowing or cessation appears to occur some ten years after the initiation of a water fluoridated program. Fluoride difficulties do occur when 20-80 mg. or more are inhaled per day as an industrial dust for periods of ten to twenty years.[5] Thus one observes crippling fluorosis in cryolite workers. However, even communities drinking natural fluoridated water with eight ppm. do not show any abnormalities, even though the fluoride concentration in the drinking water is eight times the optimum of 1 pmm.

One function of fluoride in the system appears to be to improve calcium balance and delay deleterious excretion of calcium. As a result there appears to be less osteoporosis or decreased bone density in fluoride areas than in fluoride deficient ones. This has given rise to the hypothesis that optimal fluoride ingestion may in time prove to be helpful, even highly beneficial, in prevention of osteoporosis and all the associated problems among older people. In fact, practical use is being made of this hypothesis in the treatment of osteoporosis, Paget's disease, and even multiple myeloma, especially in the early stages. Bernstein[6] used dosages of the magnitude of 50 mg. T.I.D. of fluoride with marked improvement and no signs of toxicity. He found marked recalcification and symptomatic relief. Smaller doses are now being tried in similar cases to determine if comparable results may be obtained.

Unfavorable effects from drinking fluoridated water is some mottling of teeth after the major reduction in dental caries has been obtained. But this occurs in less than ten per cent of subjects. There is however no positive discoloration of the yellow or brown variety. In fact, the teeth of children in fluoridated communities in general are said by Dunning to appear more attractive than those of children in nearby control areas.

There is no increased incidence of death in diabetes and nephritis in fluoride communities and no evidence among human beings to support the theory derived from some laboratory animals exposed to high fluoride content, that cancer might be accelerated in man. No evidence of a causative relation have been found between fluoride and abnormalities of growth such as height, weight, bone fracture experience, or mongolism. The last though reported by Rappaport, has been thoroughly contradicted by better designed studies.

Among the value judgments upon the safety of water fluoridation is the report of the Commission on Chronic Illness which in 1954 urged American communities to adopt fluoridation as a positive step in the prevention of the chronic disease dental caries. Then there is the re-endorsement of water fluoridation by the American Medical Association in 1957 and in October 1963.[7] The Association believes that fluoridation should be regarded as a prophylactic measure for reducing tooth decay at the community level and is applicable when the water supply contains less than the equivalent of 1 pmm.

Dunning has estimated the saving cost of fluoridation was $303 per person. In view of the fact that dentists of this country are now unable to care for even half of the total dental needs of the population, members of their profession welcome reduction of this sort, in caries as an opportunity to complete a larger proportion of their cases. In view of all this, the Connecticut Legislature would do well by our state in passing legislation to make mandatory fluoridation of community water supplies and help eliminate the commonest chronic disease.

L.H.N.

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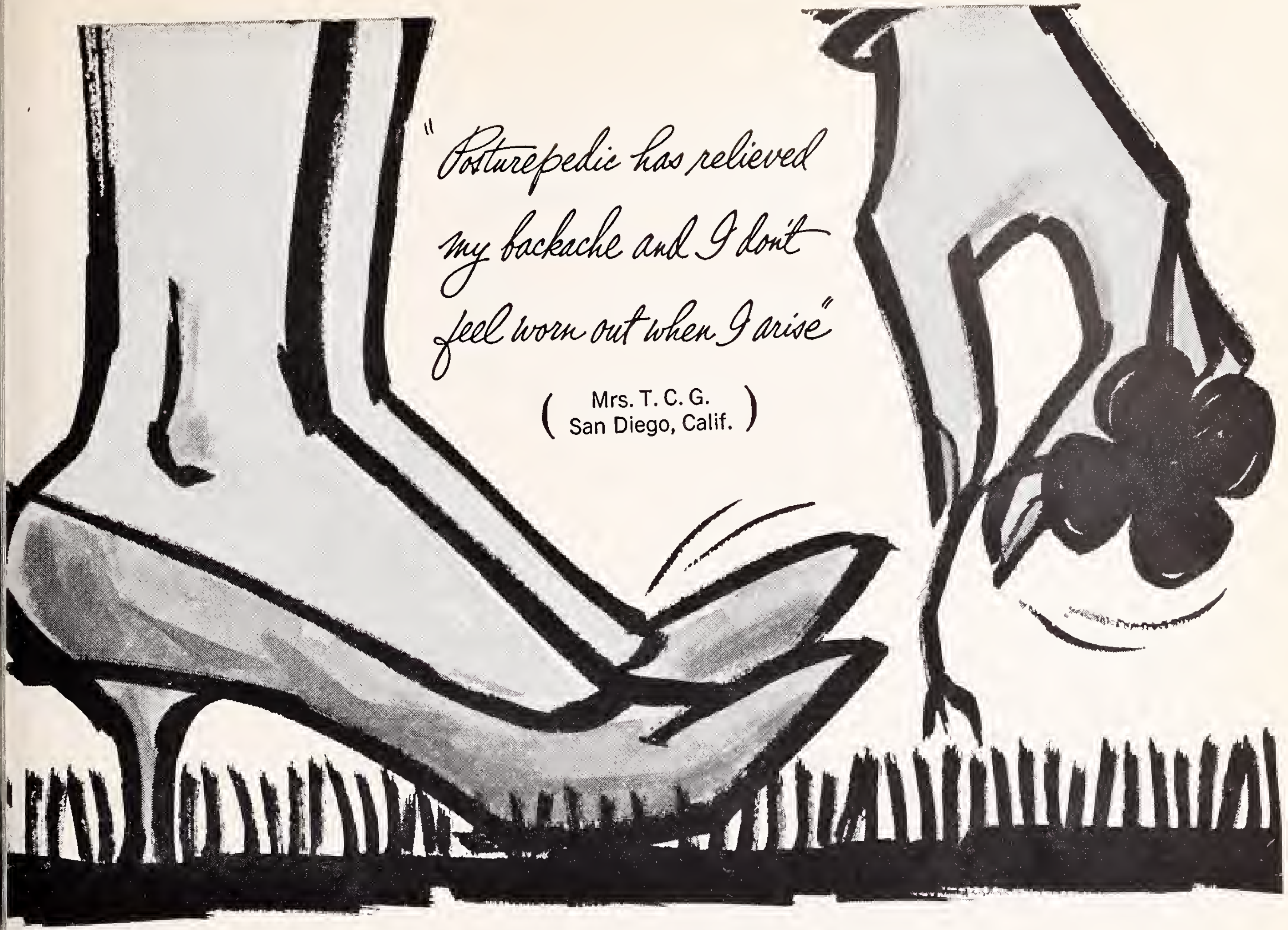

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The Non-Disease Clinician

With tongue in cheek, Clifton Meador has drawn our attention to a new science, the science of non-disease. A non-disease is one in which a given disease, though suspected or even diagnosed, is not present. For example, a pigmented man of Indian descent is suspected of having Addison's disease because he also has a blood pressure at the lower limit of normal. This would be termed non-Addison's disease. A patient with obesity, facial rounding and facial hair mimicking Cushings Syndrome but not having it, would be termed non-Cushings disease. A woman with familial facial hair but otherwise normal and suspected of the virilizing syndrome would be an example of the non-virilizing syndrome; or a patient with grade I systolic murmur suspected of having mitral regurgitation, but not having it, could be an example of non-mitral regurgitation.

Of course having a non-disease does not preclude one from having a disease in another organ or system. Thus he may have non-aortic stenosis and also cholecystitis. It becomes quite apparent that physicians with experience and training will be found in such "sciences" as non-cardiology, non-gastroenterology, non-hematology, even as Meador is a specialist in non-endocrinology. Furthermore, all of us at one time or another have experienced at first hand specialists in areas other than our own, as for example in non-radiology and clinical non-pathology.

Every physician happens onto these diagnoses with alarming frequency. Let us take for example the "laboratory error syndrome." Any medical or laboratory value which is subject to a lower and an upper limit of normal can lead one onto the non-disease syndrome. These laboratory error syndromes are the delight of the alert non-disease clinician, and turn out to be the most responsive to treatment of all entities. Suppose for example the hemaglobin level is reported to be six grams per 100 m.l. yet the patient looks pink. One has only to repeat the test once or twice to obtain the most outstanding results. In what other disease or non-disease can one see a rise in the hemaglobin level to fourteen grams per 100 m.l. in two hours after only one iron pill?

Meador has described a non-disease syndrome in which polycythemia (a hematocrit of sixty per cent) coexisted with an anemia (seven grams). The course of this non-disease was fascinating. Over night there was a marked fall in the hematocrit and a dramatic rise in hemaglobin, both finally reaching a normal level. What a challenge to the physician! There appears to be a marked tendency for such non-diseases to occur at night. If they do they can be termed nocturnal non-anemia or nocturnal non-hyponatremia! Some of these difficulties arise because of "serendipitomania," a common habit of ordering all the laboratory tests in the books in the hopes of "falling onto" a disease. The trouble of course is not only the expense, but more often than not, one "falls onto" a non-disease. Non-diseases in some cases can be rapidly converted into diseases, if the non-disease comes under treatment, as witness many of the diseases of medical progress.[2]

One fascinating syndrome described by Meador is the "over interpretation of physical findings syndrome." This is usually seen early in one's medical experience but tends to reappear later as one grows away from medical progress. Most of the entities are readily identified unless one becomes trapped into multiple non-diseases, as for example over interpretation of physical signs leading to roentgenologic over interpretation together with a touch of the laboratory error syndrome. This can produce a non-disease requiring up to two weeks to run its diagnostic course! Common entities found in this group are non-mitral insufficiency (grade I systolic murmur), non-aortic stenosis, non-hepatomegaly (liver ptosed one finger down), non-electrocardiographic abnormality.

Who contributes to the rising incidence of non-disease? All of us at some time or another. Iatrogenic non-hyperthyroidism (elevated P.B.I. is well known after a variety of iodinated contrast medicines. The nurses furnish an array of clinical material, non-fever, non-oliguria, non-tachycardia, non-hypertension, even non-shock, are examples for which the non-disease clinician must be on guard. Factitional gastrointestinal bleeding with "tarry" stools from iron salts and factitional non-hyperthyroidism due to proprietary iodinated cough syrups are representative of the cunningness of the patient in this area.

Historically medical science has witnessed the evolution of many pseudodiseases into non-diseases. The cascade stomach, uterine suspensions of the "drooping womb," nephropexies for the sagging kidney, emphasize that pseudodisease has periods of enthusiasm and also the grave error of not recognizing non-diseases for what they are. How many such unrecognized non-diseases are there today that are still being treated as diseases?

Then there is of course the latent non-disease which lurks in every patient and becomes overt as a specific entity usually in the hands of a physician, nurse or technician, but occasionally also through the "lay press" or "friends" of the patient. Latent non-disease of course is always to be preferred. Manifest non-disease is usually due to error, is expensive, frustrating and embarrassing to all concerned. For some reason some patients when told of their overt non-disease, become hostile and difficult to manage. Non-anxiety gives way to anxiety.

How then should be manage and treat a non-disease. As painful as it may be, the patient usually should be told of his non-disease. It is also most embarrassing if the treatment for his "disease" has already been instituted. Minor laboratory errors are so frequent that they can of course be overlooked. The treatment is easy only if the diagnosis is correct and non-disease clearly established. The discerning physician can do this because he is thoroughly familiar with the corresponding disease entity. Stated simply, the treatment for non-disease is never the treatment for the corresponding disease entity. As Meador says "in this statement lies the ultimate value of the Science of Non-disease." The remarkable speed with which cures can be effected in the treatment of non-disease sets this area of medical science apart as one of the most rewarding of all specialties."

L.H.N.

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Fat Metabolism And Growth Hormone

> *"In his quest for hormones and pheromones, man sometimes goes too far; but he is always confident that what is good for moths and rabbits must also be good for him. He thus unwillingly asserts his kinship with creatures which he exploits while proclaiming his descent from the gods."*
>
> —Ernest and Berta Scharrer

As is almost always the case, the development of an instrument or method to measure something leads to a great expansion of knowledge in a given field. This is well exemplified by the recent advent of the radio-immunoassays employing I^{131} labelled human growth hormone (HGH) which have shown that plasma levels of this hormone in man fluctuate rapidly during the day in response to nutritional factors. The hormone is depressed by feeding and progressively increased during fasting.[1] In addition the high levels of growth hormone encountered in acromegaly could be duplicated dramatically within thirty minutes by inducing hypoglycemia with insulin injection.[2] Furthermore, a rapid fall in HGH production follows glucose administration.

Frantz and Rabkin[3] have added to these observations by using the radio-immunoassay method to study the response of the hormone to insulin hypoglycemia and glucocorticoids. They found that glucocorticoids modulate the pituitary response to hypoglycemia, since the increase in blood HGH is much less after steroid administration. As is to be expected, five patients with definite evidence of hypopituitarism had undetectable resting plasma levels of HGH and virtually no rise after hypoglycemia. Obviously, if plasma level of HGH does not rise after an insulin challenge it would suggest the existence of hypopituitarism.

Secretion of HGH was found to be stimulated also by exercise, operative stress, and by deoxyglucose, an inhibitor of glucose metabolism. Evidently the stimuli to secretion are all those states in which fatty acids from adipose tissue are needed by other tissues as a source of energy and in which a rise in plasma free fatty acids normally occurs.

The potency of growth hormone as a metabolic agent is normally obscured by counter-regulation. In a normal person large doses may hardly alter the blood ketone bodies or glucose, apparently because the action of the hormone is opposed by appropriate amounts of insulin. Clearly when insulin reserves are limited, then even a small dose of growth hormone may induce severe ketosis and acidosis as the blood sugar rises. On the other hand, the abscence of growth hormone as is found in the hypophysectomized patient renders him extremely sensitive to small doses of insulin. One would thus be led to speculate that growth hormone is anti-insulin by virtue of its fat-mobilizing property and that insulin is anti-growth hormone by virtue of its inhibitory effect on the mobilization of fat.[4]

Frantz and Rabkin also observed that glucocorticoid administration inhibited sharply the release of growth hormone and the effect was related to dose and the duration of glucocorticoid therapy. The longer that glucocorticoids were administered, the greater was the inhibition of growth hormone. In addition to being suppressed by glucocorticoid administration, both ACTH and growth hormone seem to be triggered by identical stimuli such as hypoglycemia, physical exertion and operative

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stress. Just how glucocorticoids suppress growth hormone is not obvious. Does it decrease the reresponse of growth hormone to normal daily stimuli or does it actually cause a diminished production? This finding has clinical implications. Diminished production of the growth hormone might be partially responsible for some of the catabolic effects associated with hyperadrenocorticism as in Cushing's Syndrome. Furthermore, the well documented failure of growth in children treated with large doses of corticosteroids may be explained by the suppression of growth hormone production by the steroids.

We are in the habit of thinking of the growth hormone as a regulator of the slow process of growth and regeneration and not as a substance with moment to moment shifts in blood levels in response to metabolic needs. Now certain questions present themselves. Since insulin, exercise, and stress increase the plasma level of growth hormone, can such factors play a role in increasing growth in the growing child or animal. Specifically for example, does the sedentary child grow less than the actively exercising one. Or is it possible that there are two hormones in the growth-hormone preparations, one growth-promoting and one actively participating in metabolism? In any case, it is clear that a hormone as measured by immuno-assay which appears to be growth hormone, actively participates in fat mobilization and metabolic regulation. Thus we can see that mobilization of lipids is one of the functions of the pituitary gland and the activity is enhanced by simultaneous administration of ACTH or corticosteroids.

Adipose tissue has been a "neglected" tissue but we are now beginning to see more clearly some of the factors that play a role in its function. Scharrer[5] points out that it is under direct nervous control as well as under hormonal regulation. For example, denervated fat tissue shows increased sensitivity to insulin and no longer becomes depleted even in severe inanition. In this regard it behaves like lipomas which are without innervation and are similarly unresponsive to the demands of the starving organism. The stimuli resulting from low caloric intake act on sensitive centers on the brain which stimulate the pituitary to release the growth hormone. However, only innervated fat responds to this agent. We can begin to glimpse the beautiful checks and balances involved in fat mobilization in which the growth hormone, insulin, ACTH and the nervous system all interact to increase or decrease the fatty acids in the blood.

L.H.N.

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Returning The Cardiac To Work

There was a time when the cardiac patient was enveloped with concern and contained with arbitrary restrictions. Now we are beginning to think of him as little different from the non-cardiac as long as he does not exceed his limitations. We do, however, need to know what is the nature of his heart disease and to what extent it is complicated by other disorders such as chronic lung disease, diabetes, hypertension, peripheral vascular disease or arthritis. This helps us to form an opinion on the extent of the cardiac impairment and how it is reflected in the degree of cardiac disability; whether the disease is progressive and to what extent. It is only when we can form a judgment as to how much the heart can sustain now and later.

In returning the cardiac to work, besides his cardiac status, some knowledge of his previous experience is also important. Did he like and enjoy his previous job? Will his employer's and coworkers' attitude be changed now that he has heart disease? What is the demand for the capabilities he has to offer? Are there other job prospects for him now? Fortunately, most cardiacs present little difficulty in these regards. Given adequate support and guidance they make needed readjustments and return to their former work.

The word work brings to our mind varying degrees of physical, emotional and intellectual exertion regularly applied to the accomplishment of a particular task. If we think of it in the limited sense of earning a livelihood, then complications may arise from the employer-employee relationship. Where there is a labor surplus either through introduction of automation or decline in business, then efforts to return the cardiac to work will be discouraged. Nevertheless, for most people work is essential. People need a reason to get up and get going and will sink into depression and vacuumness without it. For this reason planning the cardiac's return to work should start soon after a myocardial infarction, when the emergency phase has abated. At this time anxiety of the patient is at its peak. The frequent visits to the patient affords an opportunity to learn about his feelings as well as how he feels. At this time every opportunity should be used to condition the patient to believe he will return to a useful life. The temporary nature of his illness should be stressed. He should be assured that at the right time he will engage in a program of increasing activity at a rate which will be dictated by his increasing capacity.

There are certain danger signals to watch for as we guide our patients through gradually increasing activity, such as anginal pain; palpatation, dyspnea, dizziness, undue fatigue, arrhythmias, inordinate rise in pulse rate and its slow return to a resting level. As shown by Cain[1] electrocardiographic monitoring is helpful in determining readiness to advance to greater activity. Then after eight to ten weeks these graded activities should merge into a regime of physical conditioning, that should remain a lifetime program of regular exercise as strenuous as the patient is able to perform without the warning signs of pain, dyspnaea, undue fatigue or cardiac irregularities. The gradual increase of activity after an infarction will finally permit us to measure the residual cardiac capacity. In the meanwhile, the physician has an opportunity to obtain detailed knowledge of the kind of work required as well as the conditions in the plant.

In some instances it is obvious that the patient cannot return to his old job. Sometimes this will be dictated by the strenuousness of the work or exposure to such environmental hazards as extremes of temperature and humidity, altitude or chemicals. In such cases as airplane pilots, bus drivers, overhead crane operators, it will be the potential risk to others, whether they are co-workers or the public. In such instances a total job change will be necessary and require considerable adjustment. It is in these situations where vocational guidance and opportunities for retraining and ultimate placement should be undertaken early to minimize the unemployment period. Experience has shown that the difficulties of returning the cardiac patient to work increases with the duration of his separation from it and after six months of inactivity, the difficulties are almost insurmountable.[2]

However, except for the special instances already mentioned, most jobs found in modern industry are well within the range of activity tolerated by the majority of "coronary alumni."[2] Many require little more energy output than the activities of daily living and much less than energy expenditure required for recreational activities or ordinary housework. We must also remember that only one-half of the cardiacs' working hours are spent at work and we must not ignore the activities he pursues the rest of the day and night. Muscular effort is only one factor involved in cardiac cost of work. There is the cardiac burden created by the work of breathing, of dissipating heat generated by muscular metabolism, the circulatory demands from other organs such as the digestive system in the post-prandial state and the added burden imposed on the heart by emotional stress.[3]

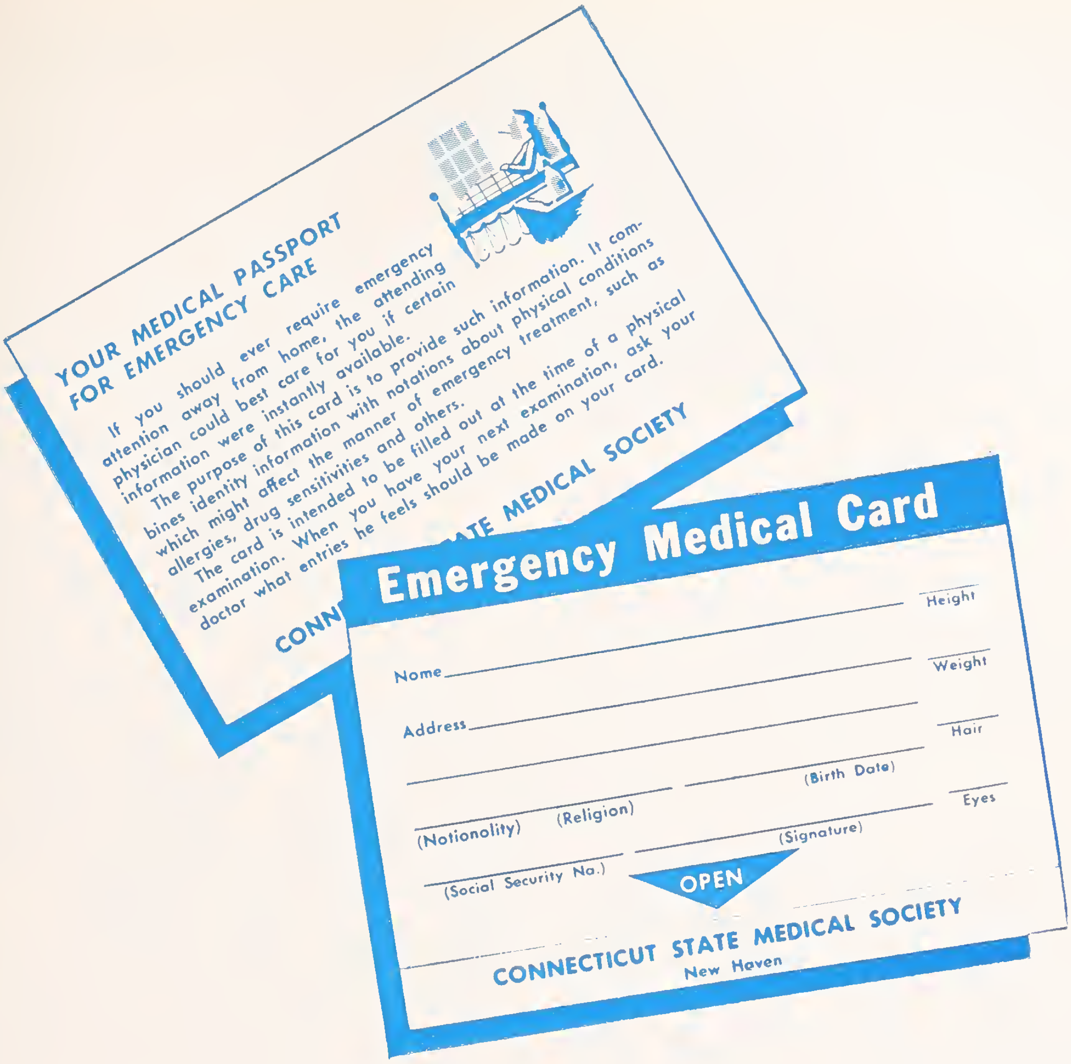
The cardiac costs are modified by a variety of extrinsic factors such as the nature of the work, the rate of work, the number and duration of rest pauses and fatigue. The environmental conditions such as exposure to heat and humidity may add to the heart load as may heart stress from wearing occlusive protective clothing. Then there is the individual variability in the amount of energy required for any specific task. The "knack" of a job, the skill and efficiency acquired over years may enable the cardiac to perform heavy work with significantly less expenditure of energy than he would need to do lighter work that is strange to him. By strategically interposing rest periods between spurts of activity, he may perform better than in less strenuous work that requires a more sustained effort.[2]

Physical conditioning produces a more efficient utilization of energy expenditure. In this way a greater amount of work may be accomplished without increasing the burden on the heart and circulation. But this also leads to a lessening of anxiety, since the cardiac after conditioning can undertake physical effort which otherwise might produce symptoms. Anxiety may also be aroused by undue attention to the physiologic responses involved in physical activity. The patient should be assured that a rapid heart beat and heavier breathing is a normal response to muscular work and not a symptom of cardiac insufficiency requiring a halt in such efforts.[4]

The patient's own anxiety may be compounded by the anxiety displayed by his supervisor or his co-workers, or his family. When they focus on the cardiac and his activity, it may introduce a kind of "miasma" that may be as toxic as the more conventional of the environmental hazards.

The cardiac's work habits may also be modified by his personal habits such as overeating and smoking. There are so many variables which affect the heart's response to work, that one cannot be rigid or precise in delineating what a particular patient may or may not do. We cannot specify all the factors to be taken into account, but we can clarify for the patient the removable burdens on cardiac work and the importance of avoiding the limiting symptoms of pain, excessive dyspnea and fatigue.

The solution is to be found in giving the patient the responsibility for making his own minute to minute decisions, encourage him to work at his own peak capacity, to explain the symptoms when



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he has reached his limits and teach him to recognize when they are being approached. As Warshaw advises "help him to be brave yet not daring or foolish, cautious and temperate, but not fearful or timid."[2] Seeing the patient regularly helps to reinforce the lessions and bring him up to date with his capacity which may be changing either for the better or worse.

When we have brought an acute coronary through the crisis of a mortal illness, and we are sure he will survive, we have a justifiable inner satisfaction. Let us remember, however, the job is not done until the patient is restored to living in the fullest sense of that word, to function adequately and get back to work.

L.H.N.

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Statement By Franklin M. Foote, M.D., Commissioner Of Health

I want to congratulate the Public Health Council for taking the leadership in providing fluoridation for nearly all Connecticut children. In the past seven years we have made much progress in providing the benefits of fluoridated water in the state so that now we have 620,000 Connecticut residents drinking fluoridated water or about 28 per cent of the population who are on public water supplies.

In 1957 there were only five per cent of Connecticut residents drinking fluoridated water. Since 1940 numerous studies in the United States have been conducted and now there are over 8,500 scientific articles in reputable journals all proving that fluoridated water prevents tooth decay by at least 60 per cent. In other words, two out of every three dental cavities can be prevented simply by adjusting the fluoride content of the water to one part per million. I say adjusting because all water supplies contain traces of fluorides and some water supplies have at least one half part per million of fluorides as do certain wells in Coventry, Mansfield, Ridgefield, Tolland, South Windsor and Woodstock.

Already in Connecticut eighteen communities are fluoridating: New Britain, Cromwell, Mystic, Torrington, New Canaan, Willimantic, Bristol, Middletown, Berlin, Windsor, Hartford, Bloomfield, East Hartford, Glastonbury, Newington, Rocky Hill, West Hartford, and Wethersfield.

And parts of the following communities also have water adjusted to the nutritionally proper amount of fluoride: Plainville, Farmington, Mansfield, South Windsor, Stonington, and Groton.

Within the last year or so scientific papers have shown that fluoridated water not only helps the dental health of children and adults, but it also may be beneficial in the prevention of brittle bones of older persons. Even more recently in the January 1965 Journal of the American Dental Association there is evidence that just as important as the prevention of tooth decay fluoridated water can help eliminate bad bite and malocclusions.

It was shown by Doctors Gertrude Tank and Clara Storvick that in comparing two similar groups of children in Oregon, one group drinking water with the optimum amount of fluoride and the other non-fluoridated water that there were twice as many malocclusions in the non-fluoridated area.

Here in Cromwell after twelve years of fluoridation there were 78 per cent fewer missing six year molars from the fluoridated area compared with the non-fluoridated area. In New Britain after 10 years, there were 85 per cent fewer missing first permanent molars among children of 10 to 12 years, and 67 per cent fewer missing teeth in the 10 to 12 year group.

The Public Health Council today has shown the way for most of Connecticut children and adults to reap the rewards of fluoridation which can be inexpensively applied to all the water systems. In Hartford at the present time, it costs about five cents per person per year to drink fluoridated water. In Willimantic the cost is about six cents per person per year. Compare this to the cost of dental care, of dentures and to the fact that one out of every six health dollars is spent on dental care.

The problem of tooth decay is serious and widespread enough to warrant state-wide adoption of fluoridation so that all Connecticut residents may share its benefits immediately. We should have no distinction between favored or first class "fluoridated" children and unfavored or second class "non-fluoridated" children.

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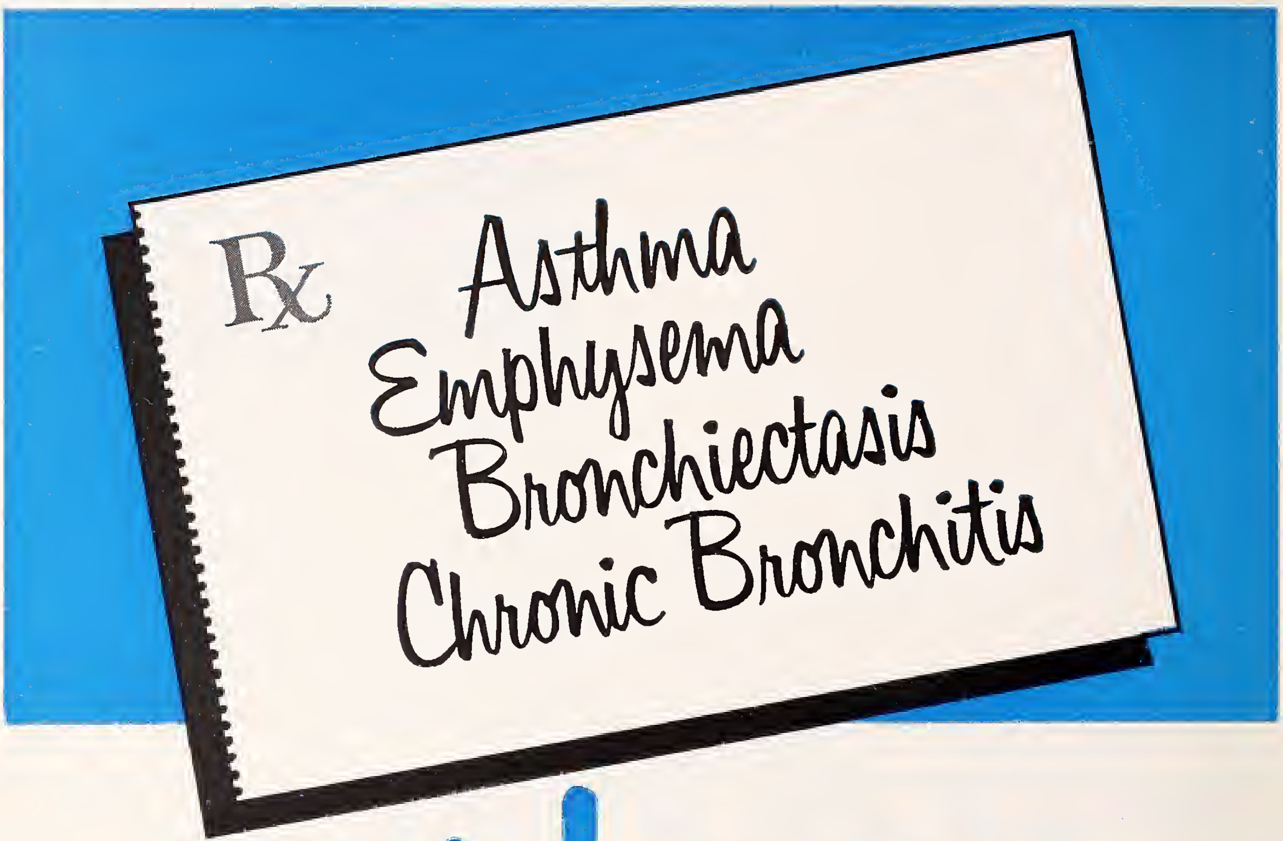

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■ Despite advances in diagnosis, the surgical abdomen on occasion continues to present a problem in differential diagnosis. One of the infrequent causes of the acute abdomen was encountered in two cases of segmental idiopathic omental infarction. Because the symptomatology simulates that of acute appendicitis so closely, it is worthwhile to present the following two cases.

Case Reports

Case #1, Hospital #141930: W. H., a six-year-old white male, was admitted to the Mount Sinai Hospital, Hartford, Connecticut, on November 3, 1963, complaining of abdominal pain and neusea of 14 hours' duration. There were no other symptoms. Past history was entirely negative. On admission, examination revealed temperature of 99.8 rectally, tenderness and spasm with slight rebound in the right lower quadrant, and a suggestion of a palpable mass. Prior to admission the W. B. C. was 8,500 with 70 per cent polymorphonuclear leukocytes, 26 per cent lymphocytes, 4 per cent monocytes; following admission, the W. B. C. rose to 10,800, with 78 per cent polymorphonuclear leukocytes, 2 per cent stab forms, 18 per cent lymphocytes, and 2 per cent monocytes. During the first four hours of observation tenderness in the right lower quadrant increased; muscle spasm became more marked; and a preoperative diagnosis of acute appendicitis was made. At operation, the only finding was a black segmental area of omentum. The infarcted omentum was excised and an appendectomy performed. Postoperatively the patient made an uneventful recovery. Hematological studies done at that time were negative. Reviewing the history, the parents recalled that the patient may have sustained a blow to the right side of the abdomen while playing prior to the onset of the present illness.

Case #2, Hospital #145289: S. V., a 53-year-old white male was admitted on March 21, 1964 to the Mount Sinai Hospital, Hartford, Connecticut, with anorexia and abdominal pain of 24 hours' duration. Past history included treatment for a duodenal ulcer, a hemithyroidectomy, and a hemorrhoidectomy. He had no previous episodes of pain similar to the presenting complaints. On admission examination revealed temperature of 99.4 rectally; his tongue was slightly coated; there was tenderness, muscle guarding and rebound tenderness in the right lower quadrant. The examiner thought a mass could be palpated on the right side of the abdomen at the level of the umbilicus. The W. B. C. was 18,000 with 72 per cent polymorphonuclear leukocytes, 1 per cent eosinophiles, 1 per cent basophiles, 22 per cent lymphocytes and 4 per cent monocytes. Roentgenogram of the abdomen was negative. With a preoperative diagnosis of acute appendicitis, operation was performed. At operation, there was a small amount of blood in the peritoneal cavity; a hemorrhagic and infarcted triangular 5 x 5 cm. segment of omentum lying on the right side of the abdomen was found; there were also some adhesions between several loops of small bowel. The appendix was normal. Omentectomy and appendectomy were performed, and the patient made an uneventful recovery.

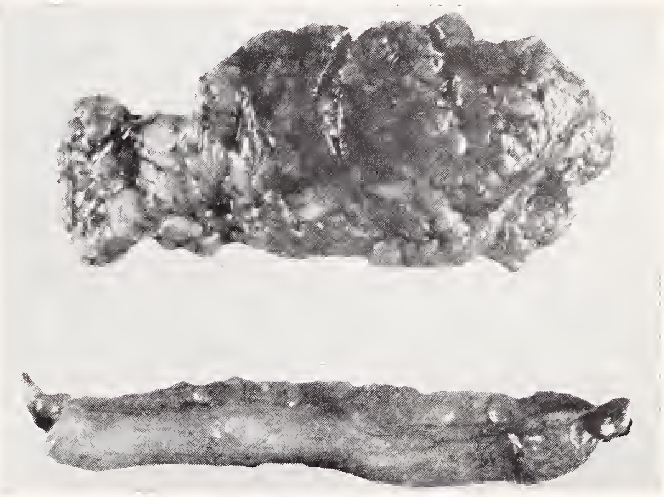

FIGURE IA.
Gross appearance of appendix and omentum.

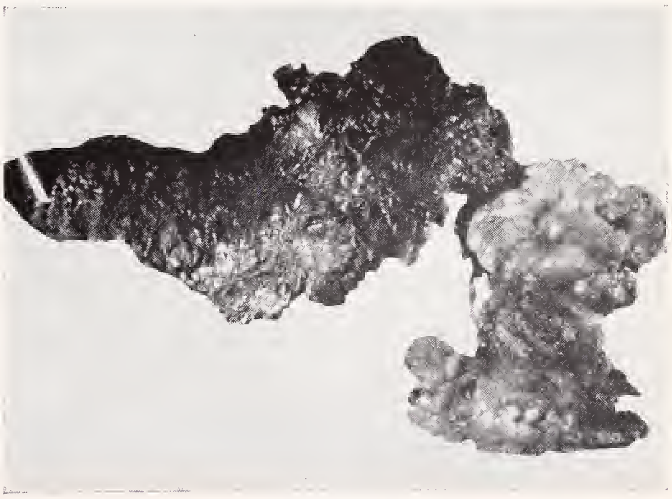

FIGURE IIA.
Gross appearance of omentum with evidence of infarction.

From Department of Surgery, Mount Sinai Hospital, Hartford, Conn.

DR. POLIVY, attending surgeon, Mt. Sinai Hospital, Hartford and Director of Medical Education, Mt. Sinai Hospital, Hartford.

DR. ROSENTHAL, member of courtesy staff with assignment, Mt. Sinai Hospital, Hartford.

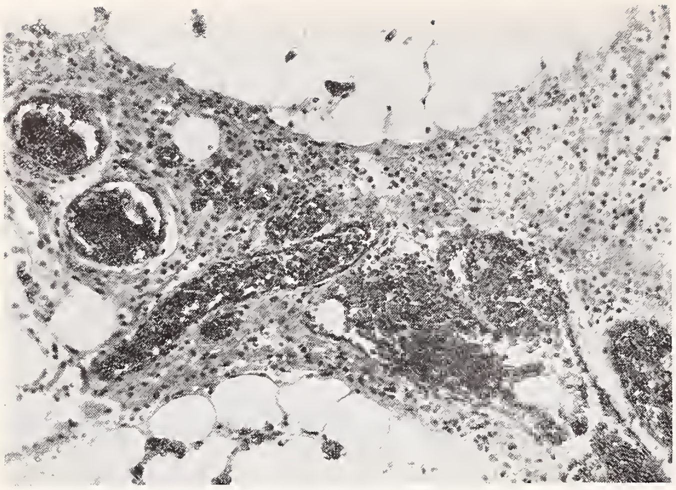

FIGURE IB.

Note thrombosis with organization and leukocytic proliferation of infarcted omentum.

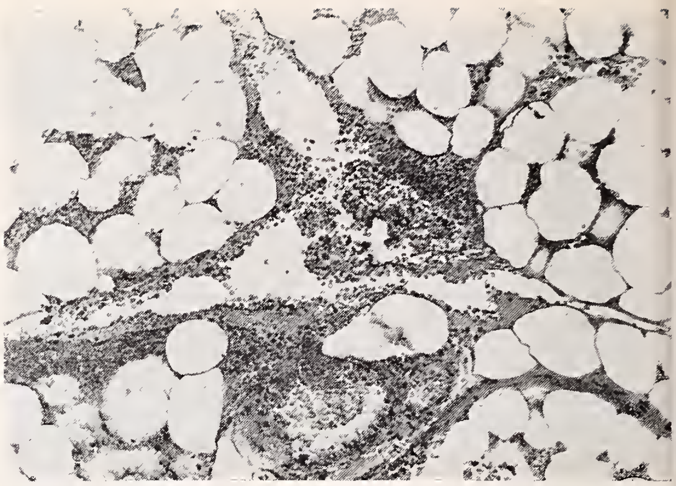

FIGURE IIB.

Note thrombosis with early fat necrosis without organization or leukocytic response.

Discussion

Hemorrhagic infarction of the greater omentum was first reported in 1896 by Bush;[5] however, he considered it a case of hemorrhage into the omentum. The first case of infarction of the greater omentum diagnosed surgically was reported by Johnson in 1932.[6] Approximately 75 cases have been reported with the majority during the past ten years. Preoperatively the diagnosis of acute appendicitis was made in 70 per cent of the reported cases. In only one reported case was the diagnosis of an omental infarction made preoperatively.[7] The condition may occur at any age, but is found more frequently in the third and fourth decades. In 1952 Leitner proposed the following classification:[16]

- a. Omental infarction due to torsion.
    - 1. Idiopathic.
    - 2. Secondary; for example, postoperative hernia, etc.
- b. Omental infarction due to thrombosis.
    - 1. Idiopathic; for example, after coughing, lifting etc.
    - 2. Associated with vascular disease.
    - 3. Due to external trauma.

The criteria required for diagnosis of idiopathic omental infarction by Wrzenski[18] were as follows:

1. The lesion must be idiopathic with no definite history of other associated disease.
2. The lesion must be confined to the omentum.
3. It must be segmental.
4. The pathology, grossly and microscopically, of infarction of the omentum must be present.

In 1951 Seley reported a case of a 28-year-old Puerto Rican male with infarction of the omentum and polycythemia, and raised the question of the etiological relationship.[20] When a history of trauma to the abdomen is obtained, the differential diagnosis becomes less difficult. Although the most frequent symptoms are referable to the right lower quadrant, abdominal pain may present anywhere in the abdomen where segmental infarction of the omentum has occurred. The findings are usually the presence of a palpable mass and tenderness, and at operation, blood in the peritoneal cavity.

The two cases presented here emphasize the necessity of considering segmental omental infarction in the differential diagnosis of the acute abdomen. A review of the criteria for diagnosis and treatment is presented.

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Anatomical Observation

Anatomy is an indispensable step to the more complex science of physiology which explains the vital forces of the body and this, though it may be helped by anatomy, demands observation of or experiment on the living organism. Fabricius' description of the valves in the vein stimulated Harvey to find out their use by the experimental method. Gaskell's physiological demonstration of the muscular continuity between the auricle and the ventricle was made on reptiles and was supposed to be confined to them until 1893, when the auriculo-ventricular bundle was described in mammals by Stanley Kent and by W. His, junior; in 1906 Tawara gave a full account of the junctional system, including the auriculo-ventricular node and the bundle previously described by Kent and His, the fibres of the bundle being continued into the Purkinje fibres which line the interior of the ventricles and communicate with their muscular fibres; this was followed in 1907 by Keith and Flack's discovery of the sino-auricular node, the normal pacemaker of the mammalian heart; the later anatomical observations were subsequent to and directly stimulated by the needs of the new cardiology, for Mackenzie's epoch-making book on the pulse was published in 1902. —Sir Humphry Davy Rolleston. *The Harveian Oration.* Great Britain, Cambridge University Press, 1928, p. 6.

Some Cautions On "Minor" Psychotherapy

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■ There are many valid approaches to psychiatric illness and it is desirable that they be fully utilized by as many trained people as possible. The isolation of the psychiatric patient from the medical profession and the community is finally yielding to the open-door policy, the day-care center, the introduction of the psychiatric service into the general hospital, and a more widespread recognition of the psychological factor in illness. The practitioner is being encouraged to carry out "minor" psychotherapy; the borderline between pastoral counseling and psychotherapy is becoming more hazy; there are serious attempts to enlist the empathic layman to provide "superficial, supportive help." The spirit of optimism, humanism, and egalitarianism takes on something of the character of a mental hygiene crusade. There are many points of view and whether carried out in the group or family setting, in the church, office, shop, club or street corner, all can point to some success. Sometimes all are encouraged to work together as a "team": marriage counselor, family therapist, vocational counselor, guidance counselor, together with interested volunteers, press into service.

Since the need is great and the goal worthy it may be in keeping with good team spirit to demur. But, in our zeal to promote community-wide action for mental health, it is essential that high standards and real distinctions be preserved lest, in the name of progress, they be blended into pap.

This is especially so since the effort to replace ignorance and superstition sometimes succeeds only in fostering banality. It is even more disquieting that this can pass for communication and pose as a therapeutic rationale. For example, "oriented" practitioners say, "What she needs is someone to talk to," or, "I just don't have the time to spend talking to her," or, "I let her keep venting and I don't say a word," or "Talk to her and straighten her out." It is as if the practitioner gets the idea that talk, itself, is supposed to carry a magical curative power; being "understanding" becomes the soft substitute for listening hard in order to try to understand. Of course, in an earlier day the patient may have been preached at or punished. There is little doubt that the very recognition of the patient's psychological distress is the essential first step and may by itself be helpful.

But this should not obscure the unique position of dynamic psychotherapy, amid the welter of approaches to psychiatric illness. It derives its uniqueness not because it provides the opportunity for a greater degree of talk, but because of its basic assumption that abnormal behavior is largely driven from within and not stimulated from without; outer reality and the actions one takes in regard to it are significantly determined by the inner forces of psychodynamics; the knowledge of these forces is as basic to the treatment of psychiatric illness as is a knowledge of physiology for the rational practice of medicine; improvement may occur through good will and environmental betterment, but real understanding and fundamental change often depend on the examination of unconscious forces.

The current mental hygiene encouragement of community good will and environmental improvement, so important in the prevention of mental illness, should not detract from the importance of unconscious psychodynamics. It should not be considered undemocratic, misanthropic or reactionary to have to insist upon this. It does not bespeak unawareness of the cultural heritage and positive strivings of mankind, nor is it now passé in the light of communication theory and recent bonhommie. (These are only some of the ways of attempting to dismiss the continuing importance of unconscious psychodynamics, as when a speaker recently confused lingo with "insight" and then with world-weariness referred to "the days when we thought that insight would help.")

Obviously, the first approach of the practitioner to mental illness is on the basis of surface appearance, common sense and the current external stress. But these are unreliable guides. It is easy to give undue weight to external circumstances and discount the importance of inner forces. It is especially easy where the external circumstances are dramatic and powerful. It is important for the practitioner to be on guard against this, and not to persist unduly in efforts at persuasion, sympathy and reassurance, and delay referral, as happened in the following case.

Case I

A woman became depressed following the birth of her second blind child. Everyone gave help and support in warm, natural, human ways, but the depression deepened. Her physician was reluctant to suggest psychiatric investigation of unconscious sources of her depression when the blindness

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seemed an adequate reason. He was loath to add to the woman's pain by requiring her to search herself for other causes. Impressed by the serious external reality, he underrated the power of the inner, unconscious contribution to her trouble and exaggerated the role of "minor" psychotherapy. He thus did not refer her for dynamic psychotherapy until she was openly suicidal and homicidal.

When this was finally undertaken it revealed that the children's blindness had mobilized forgotten, voyeuristic memories and fantasies of childhood. She now harbored simultaneous and contradictory unconscious ideas: that her children's blindness was the retribution for her own forbidden impulses, and that they were not really blind but only pretending as she had used to do and that she was the one who was really crippled.

As she remembered and re-experienced her childhood longing to indulge in forbidden looking, she came to recognize the burden of guilt that these old impulses had placed upon her, and the weight of the need for self-punishment through depression. In the light of her present adulthood she was able to work through this and other unfinished psychological business of the past. As she did, she felt freer to face and at last cope with the harsh current problem. It was as if each step of work in resolving the old problems cleared the way to deal with the present ones, and vice versa. The task of emotional digestion swung from past to present and back again with a progressive lifting of the depression. She was enabled to continue on to greater emotional maturity than at any time in the past. Later she was exposed to more of the kind of severe external stress which likely would have been held responsible for causing a depression. But she did not become depressed when the family suffered a serious financial setback, nor later when it appeared that the children might have congenital cardiac defects. She faced this possibility neither with shallow bravado nor with passive resignation. Her active, aware courage marked real stature and reflected the high resistance to environmental pressures which she had developed.

Neither this case nor the one that follows are the kind that the practitioner is likely to deal with except at the beginning. However, they are both pertinent to the issue of the importance of inner factors relative to external stress and thus illustrate the limitations of the surface dealings of "minor" psychotherapy. Because of inner forces, these surface techniques sometimes produce major negative reverberations, as the following case illustrates.

Case II

A young woman had been in "minor" psychotherapy on two separate occasions because of anxiety and depressive moods. She was intelligent, and highly educated, held a responsible job, was conscientious and ambitious. Her marriage to a physician seemed reasonably happy, but her symptoms were distressing and remained undiminished so she was appropriately referred for dynamic psychotherapy. Little in her previous treatments (except perhaps their failure) had suggested the kind of picture which now began to emerge. In addition to many physical symptoms, frigidity and acute marital discord, she had been secretly kleptomanic for years and was given to much acting-out. Behind her intellectual ambition she was intensely contemptuous of all men and any weakness and engaged in a ceaseless struggle for power. She considered herself superior and aloof, but also empty, rotten and worthless. She seized on all difficulties and helped to create new ones to sabotage herself and justify her anger. She would repeatedly provoke her husband into spanking her as a prerequisite for intercourse. Her hypochondriasis defeated all her doctors, her frigidity defeated her husband, her emotional detachment, intellectualization, acting-out and destructive use of external reality were designed to defeat her psychiatric treatment. She consulted other psychiatrists and tried to play their conflicting opinions against each other. She tried to provoke me to try to break her will as her parents had tried in the past. There were bitter tirades against me, the masculine world, and much argumentation seeking to justify the realistic need for her masculine attitudes and power drive.

During one session she was speaking of her husband's pressure on her to become pregnant again. What reward is there? Just talk! It's better to be a man. She experienced sexual satisfaction only once in her life and maybe what she felt was really vertigo due to a head cold. She continued with bitter vituperation at being a woman. Why won't I help her? And now her husband wanting her to have another baby was the last straw! Didn't he realize what she was going through with just one child? Being a woman is like being a garbage collector! Mistakenly reverting to "minor" psychotherapy in an effort to pacify her, I said that since she was so violently opposed to it there was no reason why she had to become pregnant now. The session ended on this note of appeasement, and she seemed quieter.

The next morning, however, her husband phoned to say that his wife had become deeply depressed, was expressing suicidal ideas, and saying that I had written her off as hopeless and that she wanted to be committed to a State Hospital. This change he noted to be sudden and in contrast to what had seemed to be recent progress.

At the next session she threw light on the meaning of this precipitous change. She said that of course she knew that she did not have to become pregnant if she did not want to, and it was not necessary for her to consult a professional person to be treated to such clichés. She had taken my remark to mean that there was no point in her trying to be a real woman, that I was really giving up, and that she was, indeed, the worthless creature she had always insisted she was.

Why she really considered herself so worthless came to light only later. It was based on unconscious childhood fantasies about what it meant to her to be a female. My gratuitous attempt to make things easier for her was made in ignorance of the underlying fantasies. These fantasies distorted her perception of my remark into an apparent acquiescence with her belief in her own rotten-ness and a reinforcement of her idea that since she was so bad inside she was right in masochistically conspiring with fate to see to it that life gave her nothing to enjoy. Again it was neither the past nor the present, but discovering the past in the present which threw light on the clinical events. As for my naive lapse into the seeming "helpfulness" of "minor" psychotherapy, it might well have been due to increasing irritation towards a very provoking patient rather than from more pious sentiments.

Discussion

Both cases fly in the face of common sense but made sense in the light of unconscious fantasies. They both reacted paradoxically to the seemingly natural mode of giving help by reducing external stress and providing encouragement. The first case failed to respond to environmental support but through dynamic psychotherapy developed a high degree of resistance to severe environmental pressure. The second case reacted with a precipitous decline to an attempt to minimize environmental stress. Thus both cases may serve to caution against the current enthusiasm for offering help for psychological disorders through the auspices of practitioners of various types, schooled chiefly in the faith that personal warmth, time and humane interpersonal relationships will in the end prevail.

It might be objected that (1) it is well to try to correct an easy over-optimism but that this viewpoint leads to over-timidity; (2) that minimally trained personnel may often help patients to a worthwhile extent; and (3) all they are intended to do is "minor" psychotherapy.

(1) It is true that the partially trained person might become more timid because of a greater awareness of the possibilities. But if we have to lean to one side or the other it may be better to tend to the side of timidity based on knowledge of the unconscious than on facile optimism based on lack of knowledge. Such timidity is more realistic and can be corrected through additional training.

(2) It is also true that more people must be trained and to varying extents. But even minimal training should teach a wholesome respect for unconscious forces. This will make the aid they render more effective. It will help them avoid doing harm. And it will throw light on the realistic possibilities in various situations where before there may have been only some hope and faith in the curative value of human relationships. This knowledge of the unconscious should go to the point where it carries the conviction that surface impressions and easy answers are hazardous. It should be sufficiently extensive to help one not to swing back and forth between the too-deep and the too-superficial. It should alert one to the situations where it is better to reinforce defenses rather than uncover unconscious fantasies.

(3) As for the issue of "minor" psychotherapy, otherwise known as "superficial, supportive treatment:" what is superficial and what is supportive are separate questions without obvious answers.

Superficial is used in contrast to deep. The distinction is not always plain. Even where it seems to be we cannot always choose and control the level at which we work. It is easy to compartmentalize and speak as if social workers were equipped to deal with certain unconscious mechanisms and not others, guidance counselors with preconscious adaptive techniques, etc. The unconscious, however, does not always cooperate with our administrative arrangements whereby general practitioners do "minor" psychotherapy, counselors "guide" and "deep" therapists "probe."

It may be more accurate to suppose that superficial and deep are simultaneous reactions to any given stimulus. Of the whole range of reactions that are simultaneously set off many are unconscious and far removed from rational connection with the stimulus source. It is not a matter of choosing a range of warmth, or distance, or of emphasis on present or on past, that will or will not have repercussions in the unconscious of the patient (and therapist). Everything probably resonates in the unconscious. One measure of competence might be the extent to which this is appreciated; another might be the awareness of the range and area in which the repercussions are likely to occur, in both oneself and patient; and a third might be the ability to cope with those that do arise. These criteria would cut across many conventional administrative categories as well as temperamental styles.

What is "supportive" is likewise susceptible to over-simplification. "Supportive psychotherapy" often refers to the use of sympathy, reassurance and encouragement. But is this necessarily supportive in psychiatric treatment? What is really supportive depends on what it is in the person that is being supported. Whatever supplies nutrient matter for pathogenic unconscious fantasies is likely to be destructive and not supportive. As in foreign aid, what is really supportive is that which is carefully chosen in the light of underlying conditions and aimed towards providing greater eventual self-sufficiency and self-support. Indulgence or retreat from real life are not likely to be supportive when pursued for their own sake. It is not really supportive to grant unlimited gratification in child rearing, to medicate indiscriminately in the practice of medicine, or to supply psychiatric patients with easy answers out of the wish for quick results.

Real support is not a method but a goal of treatment. A psychotherapy is truly supportive when it provides the opportunity to discover and resolve the inner obstacles that burden the capacity for current functioning. In this sense, dynamic psychotherapy is supportive.

What goes under the name of "supportive psychotherapy," on the other hand, often represents a lowering or relinquishment of therapeutic goals. This may be warranted in some cases where it is a deliberate course based on clinical judgment. Other times, however, it acts only as a label which shields both patient and therapist from dealing with the important issues. There is the danger that both settle too quickly for the appearance of progress, purchased at the price of real change, and disguised by the sweetening of mutual admiration and friendliness.

This is not to disparage the importance of friendliness and warmth as attractive human qualities, or to deny that they play a significant role in the prevention of psychological illness, or that they may have a beneficial effect in all illness. But it may be denied that these qualities amount to effective psychotherapy any more than fresh air amounts to modern therapeutics. It remains true, as Hippocrates wrote, that ". . . some patients . . . recover their health simply through the contentment with the goodness of the physician." And this is still sometimes all that can be offered to some patients. But, when this is so, it should be with the awareness that these human resources are all that are available due to present professional limitations of knowledge or facilities. The use of such personal qualities has a place as a treatment measure. But, to promote friendliness to the status of a professional therapy only squanders good intentions and depreciates a complex matter.

Summary

Amid the increasing welter of approaches to mental health there is the danger of lowering criteria and obscuring valid distinctions. Dynamic psychotherapy continues to occupy a unique position and represents a professional standard. Its distinction derives largely from its assumption that abnormal behavior is driven from within rather than stimulated from without. This means that it consistently examines the inner reality of unconscious forces. It finds that this often brings sense to a scene which would appear chaotic in the light of unaided common sense and surface impression. This does not mean that common sense and surface appearance should not be the first approach to psychiatric disorder; nor, of course, does it deny the value of environmental improvements. But the practitioner should not imagine that these standard approaches of "minor" psychotherapy differ only in degree from dynamic psychotherapy. He should not expect too much from "minor" psychotherapy in treating psychiatric illness. He should not persist unduly in "minor" psychotherapy if it does not yield clarification and improvement, and if competent referral is possible.

Two case illustrations are presented. Even though they are not the kind the practitioner is likely to deal with except at the beginning, they demonstrate the importance of unconscious inner forces relative to external ones. The first one shows how, even in the face of overwhelming external factors, only the clarification of unconscious forces may bring relief. The second one shows that the surface dealings characteristic of "minor" psychotherapy may produce negative reverberations in the patient. Both cases demonstrate the importance of unconscious psychodynamics in understanding clinical events and, therefore, in training. The issues of depth and supportiveness in "minor" psychotherapy are critically examined, as well as the claim of friendliness to the status of a therapy.

The Size Of The Liver And Engorged Neck Veins

If it is beyond question that the veins of the neck are bilaterally congested and it is equally beyond doubt that the liver is not enlarged, an obstruction of the superior cava must be considered. Its diagnosis will rest upon the discovery of anastomotic veins and upon failure to induce the veins of the neck to pulsate. A second reason for the same discrepancy is atrophic cirrhosis of the liver in a congested patient; the diagnosis of the liver condition will then turn upon the degree of hardness, and perhaps irregularity, of the liver margin.

There is the reverse case: an engorgement of the liver has been present for a long time and the venous spaces within have become permanently dilated and its substance a little or much fibrosed. In such, even if the signs of increased pressure in the veins greatly decline, the size of the liver may not decrease much or proportionately. It is a discrepancy which previous knowledge of the course of the malady explains.—Sir Thomas Lewis, *Diseases of the Heart,* New York, The Macmillan Company, 1933, p. 16.

Paracervical Block In Obstetrics: An Evaluation Of Various Anesthetic Agents

Jan De Koninck, M.D. and F. W. Goodrich, Jr., M.D.

■ The value of paracervical block as a safe and efficient method for pain relief in labor has already been documented by several authors. A major limiting factor has been the relatively short duration of action which, in the published reports, has averaged between sixty minutes and one hour and forty minutes. The continuous paracervical block technique described by Burchell and Sadove is probably an excellent answer to this problem, but it may not be practical in all circumstances because of technical difficulties. The present study was undertaken in order to compare the duration of action of various agents and to determine which agent gave the most prolonged anesthesia.

Material And Method

The following agents were used:

mepivacaine (*carbocaine*): This agent is twice as potent as procaine and also twice as toxic. Since it has a local vasoconstricting effect, the addition of epinephrine is unnecessary as has been demonstrated in previous studies.

hexylcaine 1 per cent (*cyclaine*): This agent is slightly more potent and also more toxic than procaine when used for local infiltration. When used for nerve block however, the anesthetic potency is four to eight times that of procaine.

hexylcaine 1 per cent with epinephrine 1:250,000

dibucaine 1:1500 with epinephrine 1:500,000: This agent has a potency of 15 times that of procaine and a toxicity of 10 to 15 times that of procaine. In this concentration it is less toxic than procaine 1 per cent and its toxicity diminishes when epinephrine is added, unlike most other local anesthetics.

Potency and toxicity compared with procaine

	MEPIVACAINE	HEXYLCAINE	DIBUCAINE
Potency	2	1.2*	15
Toxicity	2	1.2	10-15

*For nerve block, 4 to 8 times.

The blocks were administered to all ward patients by the resident staff and to selected private patients of some members of the attending staff. They were performed during the acceleration phase of the first stage of labor when the patient complained of discomfort. They were usually done with the patient in bed under routine aseptic technic. Either the Iowa trumpet or the Davis paracervical needle guide was used according to the personal preference of the operator. Since the sensory impulses from the uterus are transmitted through the sympathetic nerve fibers which pass through the broad ligament at the level of the internal os, and the uterosacral ligaments close to their uterine attachment, they may be blocked at either site. Thus initially, 8 to 10 cc. of the agent were given on each side submucosally, at the 4 and 8 o'clock positions. If relief was not immediately forthcoming, an additional 5 cc. were injected at 3 and 9 o'clock, at a depth of 1-2 cm. into the broad ligament. Using radio-opaque solutions, Kobak has demonstrated that uterosacral block and paracervical block are identical. Practically, we feel that the two injection sites may be further apart during labor with effacement and dilation of the cervix, and that, if the initial injection is not successful, a second injection should be made in a deeper and more ventral position.

If the effect of the block wore off before the second stage of labor, it was repeated. In the 130 patients included in this study, 105 had one block, 21 had two blocks, and 4 had three blocks.

If the patient was unaware of her contractions following a block, or if she was aware of contractions but had no pain, the block was judged to be successful. If the patient had incomplete or unilateral relief of pain, or no relief of pain at all, the block was classified as unsuccessful. The duration of effect was measured by the patient's own statement and the observation of the attending physician and the obstetrical nurse. When the patient stated that her pain had returned or when she showed signs of returning discomfort, the effect of

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the block was judged to be over. In many instances the effect of the block lasted through the second stage and delivery so that it was impossible to measure the duration.

Results

A total of 159 blocks were performed in 130 patients. Of these, 141 (88.6 per cent) were successful, and 18 (11.4 per cent) were failures. Although the total number of cases in which the various agents were used was too small to be of great significance, the results are shown in Table II.

TABLE II

AGENT	NUMBER	SUCCESSFUL	FAILURE
1% mepivacaine	36	26 (72.2%)	10 (27.8%)
1% hexylcaine	63	57 (90.4%)	6 (9.6%)
1% hexylcaine-epinephrine 1:250,000	26	25 (96.1%)	1 (3.9%)
Dibucaine 1:1500 with epinephrine 1,500,000	28	27 (96.4%)	1 (3.6%)

The duration of pain relief with the various agents is shown in Table III. Only those cases were included in which the effect of the block had worn off prior to the onset of the second stage of labor.

TABLE III

AGENT	DURATION MINIMUM	MAXIMUM	MEAN
1% mepivacaine	40 min.	2 hrs.	1 hr. 14 min.
1% hexylcaine	45 min.	3 hrs. 15 min.	1 hr. 47 min.
1% hexylcaine-epinephrine 1:250,000	60 min.	3 hrs. 25 min.	2 hr. 17 min.
Dibucaine 1:1500 with epinephrine 1:500,000	60 min.	3 hrs. 20 min.	1 hr. 52 min.

Effect Of The Block On Labor

Contractions often slowed down immediately after the block but only for a short time. In a few patients where epinephrine was used in the anesthetic solution, labor slowed for about five to six minutes. In one primigravida in whom dibucaine was used at six cm. dilation, there was a temporary arrest of labor for twelve minutes. In all these patients normal labor resumed after the short interval.

According to Leroy Calkins, primigravidas in good labor and five cm. dilated should deliver in 3 to 6 hours. In thirty-three primigravidas in this study who had a block at 4-5 cm., the average duration of labor following the block was 3 hours and 28 minutes. Eight of these patients delivered spontaneously: the average duration of labor after the block was 3 hours, 7 minutes. Twenty-five of these patients were delivered by elective low forceps with an average duration of labor following the block of 3 hours, 37 minutes. It seems evident that paracervical block does not prolong labor in any event, and may shorten it.

The duration of labor following block did not vary significantly if epinephrine was used in the agent.

It is our clinical impression that if a block is administered to multipara at about 8 cm. dilation, the cervix dilates more rapidly thereafter and the deceleration phase of the first stage is shortened. Many of the private patients included in this study have had some preparation in relaxation-breathing technics. To these patients, especially multipara, the period from 8 cm. to full dilation is regarded as the most painful part of the labor. If, when this point in labor was reached, these patients were taken to the delivery room and a block was administered, complete relief of pain was obtained, the cervix reached full dilation promptly and spontaneous delivery was achieved without difficulty.

Complications

Fetal

There were no fetal or perinatal deaths, Although some drop in fetal heart rate on the order of 8 beats per minute was noted in nearly 10 per cent of the patients, significant fetal bradycardia occurred only once. In this instance, hexylcaine had been used and the fetal heart rate dropped from 132/min. to 60/min. after the injection of 20 cc. of the anesthetic. Oxygen was administered, the heart rate remained at that level for 7 minutes and then returned to normal. Amniotomy had been done immediately prior to the block and at delivery the umbilical cord was found to be tightly around the baby's neck. Despite this, the Apgar score was 10, and we cannot be sure that this bradycardia was due to the block.

Maternal

There were two patients who had a fever of indeterminate etiology after a paracervical block. In both instances the rise in temperature was slight and returned to normal in two days without any localizing signs or symptoms, or specific therapy. Two patients noted a temporary numbness of the right leg. This disappeared in less than 90 minutes. There was one instance of maternal bradycardia which occurred in a young gravida 3, para 2 who had a pulse of 78 and a blood pressure of 134/82 on admission. After administration of 8 cc. in one formix using 1 per cent hexylcaine with epinephrine 1:250,000, the patient complained of discomfort in her chest and had a slow pounding pulse of 40, and a blood pressure of 140/100. Both pulse and blood pressure returned to normal levels in four and one-half minutes.

Comment

This study confirms the results reported previously: paracervical block is a safe and effective technic for the relief of pain in labor. Mepivacaine has been the drug of choice of most authors. We found that the short duration of action of this drug was a distinct disadvantage, and discontinued its use in favor of other agents early in the study. The longer action of hexylcaine and dibucaine offer a solution to the problem of obtaining a greater duration of effect.

Freeman reported a severe reaction to hexylcaine after a block had been performed using 45 cc. of a 1 per cent solution. In the concentrations and amounts used in this study we have seen no such untoward reactions.

Many authors feel that the vasoconstricting effect of epinephrine with its possible influence on placental circulation, is a contradiction to its use. We have not experienced any difficulty when epinephrine is used in a concentration of 1:250,000 or less.

One of the most dramatic effects of the use of paracervical block is the complete relief of backache which it affords. In most instances it offers the same pain relief as do other forms of conduction anesthesia. In addition it seems easier to perform and safer than saddle or caudal block.

Summary

1. 159 paracervical blocks were performed in 130 patients during the first stage of labor. 88.6 per cent of the blocks were effective.

2. Hexylcaine and dibucaine were clinically evaluated and were found to be safe, effective, and of greater duration of action than mepivacaine.

3. The addition of epinephrine to the anesthetic solution had no adverse effects and significantly increased the duration of action.

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Auscultation

Auscultation though in practice and in our minds dating from Laennec and the invention of the stethoscope was not an absolutely new idea in 1819. The Hippocratic School applied the ear to the chest and were familiar with pleuritic friction and succession. Harvey listened to the sounds of the heart, Robert Boyle (1627-91) is said also to have done so, and a little later Robert Hooke (1605-1703), as told in his posthumous works published in 1705 by Richard Waller, listened to the heart and realized, but did not pursue, the possibilities of this method of obtaining information about the movements of the viscera. Laennec believed that G. L. Bayle (1774-1816), Corvisart's assistant when he worked under him, was the first of the moderns to practise the immediate or Hippocratic auscultation by putting his ear on the chest, and stated that Corvisart listened to the heart sounds with his ear very close to but not actually in contact with the chest wall.—Sir Humphry Davy Rolleston. *The Harveian Oration.* Great Britain, Cambridge University Press, 1928, p. 74.

Medical Treatment Of Correctable Cerebral Vascular Disease

Joseph F. Fazekas, M.D.

■ The belief that any disorder is correctable is based upon the assumption that its natural history can be favorably influenced by therapeutic efforts. Whether or not this premise is pertinent to the present-day modalities used in the management of cerebral vascular disease is, perhaps, a more open question than may be generally appreciated.

There is increasing reason to believe that widely accepted concepts of treatment of cerebral ischemic disorders may not be based upon foundations as rational as has been hoped. This growing uncertainty is related to several deficiencies in our understanding regarding this problem. Probably the most serious obstacle in evaluation of current concepts of therapy in cerebral vascular disease is the lack of detailed information concerning its anatomical, physiological, and pathological background. The spontaneous variability of outcome of this disorder is widely recognized and, in most instances, renders virtually impossible a truly reliable prognosis. The first table reviews the general manifestations of cerebral vascular insufficiency. These include acute cerebral ischemia, which may subsequently be observed to represent a transitory episode with or without minor neurologic residua or which may proceed to cerebral infarction. Status postischemia is represented by cerebral vascular insufficiency in remission, as well as by completed cerebral infarction with progressive improvement or, later, with fixed neurologic deficits. Ischemic cerebral deterioration is characterized by progressive intellectual deterioration and may be a sequel of repeated transient ischemic episodes or may follow cerebral infarct.

Table I

Clinical Classification of Cerebral Vascular Insufficiency

I. *Acute Cerebral Ischemia:*
  A. *Ischemia course undetermined*—early observation or medical or surgical intervention immediately after ischemic insult making untreated prognosis difficult
  B. *Transitory ischemia*—acute neurologic dysfunction with recovery to pre-episodic state
  C. *Transitory ischemia with stable residua*—brief neurologic dysfunction with persistence of minor subjective or objective neurologic deficits
II. *Status Postischemia:*
  A. *Transitory ischemia (with or without stable residua) in remission*
  B. *Infarct with progressive improvement*—acute severe neurologic deficits with appreciable continuing recovery
  C. *Infarct with stable residua*—severe ischemic cerebral dysfunction with some subsequent return of function but with persisting neurologic deficits
III. *Ischemic Cerebral Deterioration:*
  A. *Diffuse ischemic cerebral deterioration*—progressive intellectual impairment or behavioral disturbance
  B. *Transitory ischemia with progressive deterioration*—increasing disability after each repeated episode of acute cerebral dysfunction
  C. *Infarct with progressive deterioration*—increasing neurologic dysfunction after severe ischemic episode

A major cause of our inability to predict prognosis, regardless of therapeutic endeavor, is the lack of utilization of several methods for quantitative estimation of the variety of factors, both favorable and unfavorable, which may influence the course of ischemic cerebral vascular disease; these factors are presented in Table II. No doubt, one of the first considerations should be employment of the well-standardized methods for investigation of the general circulatory system, since peripheral circulatory disturbances, i.e., decreased cardiac output, increased blood viscosity, etc., may impede cerebral perfusion and thus must obviously influence cerebral ischemia unfavorably. Next, it should be apparent that if the total cerebral oxygen delivery, for which there are available several methods of measurement, is only marginally adequate, there is little occasion for optimism concerning the outcome of local cerebral ischemia. Conversely, assuming the total cerebral oxygen delivery has been determined

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Table II
Factors Influencing Course of Cerebral Vascular Insufficiency

FAVORABLE FACTORS	UNFAVORABLE FACTORS
Optimal systemic circulatory dynamics	Peripheral circulatory disturbances causing hypotension, increased blood viscosity, etc.
Cerebral oxygen delivery in excess of metabolic requirement	Marginally adequate cerebral oxygen delivery
Functionally complete circle of Willis	Anomalous circle of Willis, i.e., incompetent or absent communicating arteries
Competent collateral blood sources (extra- and intracranial)	Absence, or failure of development of competency of collateral circulation; ultimate failure of previously functioning collateral vessels
Single aortocranial lesion	Multiple aortocranial lesions
Slow development of occlusive vascular disease	Rapid progression of occlusive disease
Significant intracerebral vasodilatation	Intracerebral arteriosclerosis, or continued high small-vessel tonus

to be in excess of metabolic requirements, a favorable redistribution of the blood supply may provide an optimum milieu for relief of local ischemia. Such redistribution may be accomplished by a functionally-complete circle of Willis and/or the establishment of collateral sources of blood supply by way of other intra- and extracranial vascular channels. Unfortunately, although quantitative determination of total cerebral oxygen supply can be performed, there is available no means of predicting its distribution potential. The circle of Willis does not lend itself to invariably satisfactory visualization even by the most advanced techniques in the most expert hands; radiographic "defects" may be artifactual or transitory, or hemodynamically inconsequential, and radiographic intactness need not bespeak complete compensatory capacity. The same may be said for other collateral vascular channels, when visualized (or when not). It can be stated, however, that the presence of multiple vascular lesions, as demonstrated by cerebral panangiography, eventually reduces the ability of collateral channels or other homeostatic mechanisms to compensate for insufficiency and exaggerates the adverse effects of an anomalous or otherwise incompetent circle of Willis. Also, the rapid progression of occlusive cerebral vascular disease, as may be observed by repeated angiography over a period of time, is likely to outstrip the development of a collateral circulation which might otherwise have been able to obviate the appearance of cerebral tissue hypoxia.

The ability of the cerebral vessels to alter their tonus in response to local metabolic changes or to alterations in intraluminal pressure directly provides some degree of protection against cerebral ischemia, and may also be a major factor in the development of collateral circulation. This ability may be estimated during quantitative cerebral blood flow measurement by inducing changes in arterial carbon dioxide tension. Cerebral vasodilatation may be impaired by degenerative disease affecting cerebral arterioles, by idiopathic unresponsiveness to normally-vasodilating influences, or by preexisting maximal vasodilatation. With regard to the latter, it may be of interest to refer to Table III, which demonstrates the refractoriness of cerebral vasomotor tone to increased arterial carbon dioxide tension in some patients with cerebral vascular insufficiency. Unfortunately, even when responsiveness to increased carbon dioxide tension can be demonstrated, it cannot be determined whether or not local refractoriness may be present in isolated vascular segments responsible for clinical cerebral ischemia.

Another problem in prognosis which has not yet been resolved is our inability to identify with confidence the significance of such vascular lesions as are radiographically demonstrable. The presence of a radiographically significant vascular abnormality in the aortocranial vessels may have little importance insofar as cerebral function is concerned, because of the effectiveness of compensatory homeostatic mechanisms. In such cases, neurologic dysfunction may actually be due to an undemonstrable intracranial vascular lesion.

The deficiencies of some of the available investigative modalities and undue conservation in employment of others interfere seriously, as stated, with prognosis in the individual case of cerebral vascular disease. This limitation, it might be thought, should be overcome by considering num-

Table III
Refractoriness of Cerebral Vasomotor Tone to Increased Arterial CO_2 Tension

AGE	C	CO_2	C	CO_2	C	CO_2	C	CO_2
	CBF		CVR		MAP		ART. pCO_2	
60	41.7	52.8	2.6	2.3	110	124	43	51
61	53.1	67.1	1.9	1.7	100	112	40	46
55	67.2	73.4	1.9	1.9	130	138	45	53
63	79.0	82.4	1.9	1.7	148	136	46	51
57	59.1	55.0	1.9	2.2	113	120	43	47
73	57.3	68.2	1.8	1.3	104	91	42	48
MEAN VALUES								
62	59.6	66.5	2.0	1.8	117	120	43	49*

* Significant difference, $p < .01$.

CBF indicates cerebral blood flow in ml./100 gm. brain/min.; CVR, cerebral vascular resistance in mm. Hg/ml. blood/100 gm. brain/min.; MAP, mean arterial pressure in mm. Hg; Art. pCO_2, arterial carbon dioxide tension in mm. Hg; C, control, and CO_2, 5 per cent carbon dioxide inhalation for 5 minutes.

bers of patients in the course of investigating the efficacy of treatment. Nevertheless, there is insufficient basic information offered in past studies to permit valid assessment of results of therapy. Such important considerations as comparability of patient material, as disclosed by cerebral panangiography before and after clinical observations, as well as quantitative data including regional and total cerebral blood flow, its response to carbon dioxide challenge and carotid compression, etc., have largely been neglected. Yet, when dealing with a disease having so broad a spectrum of anatomical and physiological variations as is the case with cerebral vascular disease, it is hazardous to accept the premise that, in other than very large series of patients, such underlying factors are probably comparable.

To the largest extent, the more hopeful situations considered amenable to medical management consist of recurrent ischemic episodes and the isolated acute ischemic episode with course undetermined. In both categories, the therapeutic modalities which have been most widely employed consist of administration of general vasodilating agents, carbon dioxide and intravenous carbonic anhydrase inhibitors, anticoagulants, pressor agents and antihypertensive drugs, and thrombolytic agents.

Although general vasodilating agents are still being advocated for the management of cerebral vascular insufficiency, there is increasing data which indicate that they have no clinical value. This reluctant conclusion should not be surprising since, as is demonstrated in Table IV, the general vasodilators in the main do not improve total cerebral blood flow and may even impair it because of reduction of mean arterial pressure concomitant with their administration. Contrariwise, inhalation of 5 to 7 per cent carbon dioxide or intravenous administration of the carbonic anhydrase inhibitor, acetazolamide (which undoubtedly acts by interference with cerebral carbon dioxide transport) do, in fact, usually induce a very significant increase in cerebral blood flow, but no evidence has been adduced that even these agents effect a demonstrable clinical improvement in cerebral vascular insufficiency, including either transitory cerebral ischemia or frank infarction.

TABLE IV

INFLUENCE OF VASODILATORS ON CEREBRAL HEMODYNAMICS

	CBF		CVR		MAP	
	C	E	C	E	C	E
General Vasodilators:						
Nicotinic acid	54.0	57.0	2.3	2.1	114	109
Papaverine hydrochloride	56.6	63.9	1.7	1.4	98	85
Tolazoline hydrochloride (Priscoline)	59.0	52.0	1.6	1.7	93	88
Histamine	56.5	57.4	1.7	1.2	94	72
Nylidrin hydrochloride (Arlidin)	48.0	52.0	2.2	2.0	102	96
Theophylline (Aminophylline)	59.4	44.4	1.7	2.1	93	91
Isoxsuprine (Vasodilan)	47.3	41.9	2.8	2.3	129	95
Specific Cerebral Vasodilators:						
Carbon dioxide (5%)	51.1	75.0*	2.4	1.9	117	131
	51.3	59.5**	2.7	2.4	134	138
Acetazolamide (Intravenous)	46.3	65.4*	2.4	1.9	109	110

* Good response in patients with cerebral vascular disease.

** Poor response in patients with cerebral vascular disease.

See Table III for explanation of abbreviations; C, control, and E, experimental.

The use of anticoagulant agents in the treatment of transitory cerebral ischemic episodes undoubtedly had its inception in efforts at prophylaxis against infarction, as is still attempted (with controversial efficacy) in coronary disease. The observation that in many patients so treated, there may be a diminution in frequency or even a cessation of ischemic attacks engendered the hope, then the suspicion, and, finally, the conviction that the anticoagulant agent was solely responsible for this course of events. However, our observations and those of others demonstrate that many patients with transitory cerebral ischemic attacks improve spontaneously and may even become free of such episodes without receiving anticoagulant or other pharmacologic agents. Review of the disadvantages of anticoagulant medication, as compared to the dubious benefits which it allegedly confers upon a therapeutic regimen, strongly suggests that its employment may not be easily justified, an opinion which, as already implied, is lately becoming more and more prominent in the closely allied field of coronary artery disease.

With the growth of skepticism concerning the role of cerebral vasospasm in the genesis of recurrent cerebral ischemic attacks, transitory episodes of hypotension have for some time been regarded as a major causative factor in this disorder. More recently, Kendell and Marshall have cast serious doubts on this hypothesis. Our studies, as indicated in Table V, demonstrate a marked reduction in cerebral blood flow resulting from induced hypotension without, however, the appearance of focal cerebral ischemia although the subjects of the study were susceptible to this disorder. It is conceivable that the cerebral areas affected by intermittent ischemic dysfunction may possess collateral sources of blood supply which, although perhaps unreliable in these individuals, may frequently be hemodynamically effective in the presence of induced hypotension. Nevertheless, hypotension, in conjunction with those yet unknown factors responsible for transitory cerebral ischemia, may well play an

TABLE V
HYPOTENSION IN PATIENTS WITH CEREBRAL VASCULAR INSUFFICIENCY

	CBF		MAP		CVR			ART. pCO_2	
AGE	C	HYP.	C	HYP.	C	HYP.	$CMRO_2$	C	HYP.
57	40.4	32.8	92	69	2.3	2.1	3.4	32	31
58	44.0	28.9	106	68	2.4	2.4	3.2	36	23
67	57.6	26.4	120	56	2.1	2.1	3.4	36	34
64	44.3	29.9	121	68	2.7	2.3	3.7	40	33
65	40.5	25.8	119	81	2.9	3.1	1.9	33	29
66	47.0	26.5	88	42	1.9	1.6	2.0	32	22
57	61.9	41.2	100	72	1.6	1.7	2.7	41	35
66	32.4	22.1	116	69	3.6	3.1	2.5	35	36
53	61.7	36.1	117	62	1.9	1.7	4.2	30	22
MEAN VALUES									
61	47.8	30.0*	109	65*	2.4	2.2	3.0	35	29**

* Significant difference from control value, $p < .01$.

** Significant difference from control value, $p < .05$.

See Table III for explanation of abbreviations. $CMRO_2$ indicates cerebral oxygen consumption in ml./100 gm. brain/min.; C, control, and Hyp., hypotension.

important role in the genesis of infarction in certain categories of patients with cerebral vascular insufficiency, most probably in those whose cerebral vessels have attained their maximum dilating capacity, i.e., have exhausted this aspect of homeostatic reserve.

Although it is difficult to induce and maintain blood pressure elevation for purposes of ameliorating chronic or episodic hypotension, without simultaneous central nervous system stimulation, small-to-moderate doses of certain sympathomimetic amines may often be capable of assisting stabilization of mean arterial pressure and improvement in cerebral perfusion in patients subject to hypotensive attacks. There appears to be no reason to fear impairment of cerebral blood flow by inadvertent induction of cerebral vasospasm since increase in cerebral vascular resistance induced by vasopressor agents has been observed only with large enough doses to cause significant blood pressure elevation. In any case, induced cerebral vascular resistance increase (even that due to reduction of carbon dioxide tension) has not been found to provoke cerebral ischemic attacks in subjects prone to such episodes. This observation probably reflects a relative resistance to vasoconstiction on the part of those cerebral vessels supplying marginally-oxygenated areas. Although the employment of sympathomimetic agents in the management of some cases of transient cerebral vascular insufficiency appears physiologically tenable, it remains to be shown whether its use will be clinically efficacious.

A consideration associated with the subject of pressor administration is the approach to arterial hypertension in the patient with cerebral vascular disease. The ability of such patients to tolerate induced acute hypotension, at least for relatively brief periods, has already been commented upon, as has the speculative potential seriousness of blood pressure reduction in the patient with impaired cerebral hemodynamic homeostasis. In consequence of the resulting uncertainty, no bold and simple recommendations can be made. The type and level of hypertension and its effect upon cardiac and renal function must be carefully weighed to determine how pressing is the need for active medical intervention, which should probably be attempted with special caution if the possible hazard of impairing cerebral perfusion is judged to be of secondary importance. Perhaps decision may be influenced by examination of the vasodilator capacity of the cerebral vascular bed. It must be remembered, however, that this measurement may not disclose local refractoriness to vasodilator influences. In any event, it would appear prudent to avoid these drugs which tend to induce even occasional episodes of acute blood pressure reduction, to lower the patient's blood pressure as gradually as the situation permits, and to be satisfied with a blood pressure somewhat higher than the normotensive level.

A brief comment may well be in order as regards the use of thrombolytic agents in stroke. Meyer has recently reported disappointing experiences with streptokinase, which seemed actually to have an adverse effect. Whether this was due to readmission of blood under a high pressure head into vessels seriously weakened by anoxia or to fragmentation of thrombus with secondary embolization may be worthy of his later comments. In either case, the conclusion that streptokinase is not a useful adjunct in the medical management of cerebral thrombosis would probably pertain also to other thrombolytic agents.

The disadvantages of prolonged bed rest have been emphasized for many years and include negative nitrogen and calcium balance, loss of vasomotor tone, and the development of personality disorders. Atrophy and contractures of remaining normally-innervated muscles, and periarticular capsulitis due to disuse in the bed patient with cerebral vascular insufficiency, can only aggravate the existing neurological disability. On the other hand, there is no evidence to suggest that early ambulation can be anything but helpful in the maintenance and restoration of vascular and voluntary muscle tonus. On this basis, it seems reasonable to believe that application of this principle by employment of physiotherapy may accelerate optimum recovery. A not inconsiderable additional beneficial aspect of early rehabilitation efforts is the maintenance of patient morale while convalescence is proceeding. In the interest of scientific objectivity, it must be conceded that such formal therapeutic endeavors probably do not influence the actual level of whatever neurological improvement is ultimately attained since this is entirely dependent on the degree of recovery from cerebral ischemia and edema.

In conclusion, I should like to emphasize that the uncertainty of prognosis of an individual episode of cerebral vascular insufficiency engenders much insecurity in the physician, who is often fearful of departing from traditional, popularly accepted therapeutic modalities, lest an unsatisfactory outcome be attributed to this deviation from possibly ineffectual orthodoxy. At present, there is no spectacular new information upon which an unqualified condemnation of this attitude can be based. On the other hand, a plea for objectivity is, more than ever, in order: We still do not have the right to attribute a satisfactory outcome in cerebral vascular disease to adherence to what, at the moment, is orthodoxy in treatment.

Shakespeare And Physicians

What did Shakespeare think of the doctors he presented as doctors? How did he intend his audience to see them? There is ample evidence. The references to Gerard de Narbon alone should convince us that for the good Elizabethan physisian—the member of the College—Shakespeare had the highest regard. Let him say so in his own words.

> *Countess.* What hope is there of his Majesty's amendment?
>
> *Lafeu.* He hath abandon'd his physicians, madam; under whose practices he hath persecuted time with hope, and finds no other advantage in the process but only the losing of hope by time.
>
> *Countess.* This young gentlewoman had a father—O, that 'had,' how sad a passage 'tis!—whose skill was almost as great as his honesty; had it stretch'd so far, would have made nature immortal, and death should have play for lack of work. Would, for the King's sake, he were living! I think it would be the death of the King's disease.
>
> *Lafeu.* How call'd you the man you speak of, madam?
>
> *Countess.* He was famous, sir, in his profession, and it was his great right to be so—Gerard de Narbon.
>
> *Lafeu.* He was excellent indeed, madam; the King very lately spoke of him admiringly and mourningly; he was skilful enough to have liv'd still, if knowledge could be set up against mortality.
>
> *All's Well That Ends Well,* Act. I, Scene 1

—Simpson, R. R.: *Shakespeare and Medicine,* Edinburgh: E. & S. Livingstone, Ltd., 1962, pp. 71-72.

THE PRESIDENT'S PAGE

On January 9 and 10, 1965, the AMA conducted a national conference on Kerr-Mills in Chicago. Over 250 people attended with delegates from all fifty state medical societies and representatives from the AMA Board of Trustees, the Councils on Medical Service and Legislative Activities, and the staff. The purpose was to assess how the program is functioning and how it can be improved and strengthened so as to serve more fully the purposes for which it was initiated. At the outset, it was stated that the Administration admits the program will still be needed even if the so-called Medicare legislation is passed by Congress.

As of January, only six states have not passed enabling legislation; three states have yet to appropriate funds to implement the enabling laws. Probably the outstanding general fact about the whole program is the wide variation from state to state on requirements for eligibility—income levels, assets, and responsibility of relatives to mention a few—and the amounts and kinds of services rendered. A review of these factors shows that the MAA program in Connecticut stands up well in comparison with other states. Practically all agreed that improvements in these programs are essential to achieve the fullest implementation. One of the most pressing needs is to achieve a greater simplicity of administration by eliminating the time-consuming and costly Welfare Department investigations of applicants—and likewise to persuade these departments to change their philosophy of treating applicants as "charity" or "welfare" cases. To keep people from becoming welfare cases was one of the main purposes of the program.

What do *you* and *your patients* know about MAA in Connecticut? Are you well acquainted with what it can do, who is eligible, and how a person can apply? You should be if you have read—or better still—have on your reception room table—the excellent pamphlet furnished you from the State Society office. One of the serious indictments leveled by Dr. Annis at the conference was the appalling lack of information on the part of physicians in general throughout the country on the subjects of Kerr-Mills and "Medicare," and to this factor he ascribed a considerable share of the failure of medicine to get its story across to the people and their legislators.

By the time this page appears in print, H.R. 1 and S.1—the 1965 versions of King-Anderson legislation for limited hospital and nursing home care under Social Security—will be well along in the legislative hopper. What, if any, consideration will be given to the bills introduced on behalf of the AMA to modify the Kerr-Mills Act so as to incorporate the use of Blue Plans and private insurance to provide the widest possible medical coverage for those 65 or over remains to be seen. They have, at least, received some favorable editorial comments from sources which have previously been quite critical. Perhaps they are too little and too late. If so, physicians will have to shoulder a good deal of the responsibility, neophytes as we are in the hurly-burly and in-fighting of practical politics.

Ralph L. Gilman, m.d.
President

173rd ANNUAL MEETING

of the

CONNECTICUT STATE MEDICAL SOCIETY

Statler-Hilton Hotel

10 Ford Street, Hartford, Connecticut

April 27, 28, 29, 1965

PROGRAM COMMITTEE

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Paul F. McAlenney, Jr., *New Haven*

Rudolf E. Klare, *Woodstock*

PRELIMINARY PROGRAM

Tuesday, April 27

Mezzanine Floor

ANNUAL MEETING OF THE HOUSE OF DELEGATES

Kenneth F. Brandon, *Hartford, Speaker of the House, presiding*

10:00 Call to Order
Business Session

1:00 Luncheon for Officers, Members of the House and Guests

2:00 Resumption of Business

Wednesday, April 28

9:00 REGISTRATION—MEZZANINE

TERRACE ROOM

9:30 CALL TO ORDER—President of the Society

ADDRESS OF WELCOME—President, Hartford County Medical Association

9:45 THE ROLE OF IMMUNOLOGY IN INFECTION

CLARK D. WEST, Cincinnati, Ohio

10:30 GAMMA GLOBULINS AND THEIR RELATIONSHIP TO INFECTION

DAVID GITLIN, Pittsburgh, Pennsylvania

11:10 INTERMISSION

11:40 PROPHYLAXIS AND TREATMENT OF VIRUS INFECTION

HARRY M. ROSE, New York, New York

12:20 RECENT ADVANCES AND PERSPECTIVES IN THERAPY OF ACUTE LEUKEMIA

JOSEPH H. BURCHENAL, New York, New York

1:00 LUNCHEON—CITY ROOMS

INTERMISSION TO VISIT TECHNICAL EXHIBITS

2:00 ORAL LESIONS OF INTEREST TO THE PHYSICIAN

S. N. BHASKAR, D.D.S., M.S., Ph.D., Washington, D. C .

2:40 GLOMECTOMY FOR ASTHMA

RICHARD H. OVERHOLT, Boston, Massachusetts

3:30 **Meetings of Sections of the Society and Guest Organizations**

Section on Allergy
Section on Dermatology
Section on Gastroenterology } Joint Meeting
Section on Internal Medicine }
Section on Obstetrics and Gynecology
Connecticut Society of Pathologists
Section on Urology
Connecticut Diabetes Association
Hezekiah Beardsley Pediatric Club

7:00 **Annual Dinner of the Society—Terrace Room**

Thursday, April 29

9:00 REGISTRATION—MEZZANINE

TERRACE ROOM

9:45 INFLAMMATORY DISEASES OF THE BOWEL INCLUDING REGIONAL ILEITIS AND CHRONIC ULCERATIVE COLITIS

CORNELIUS E. SEDGWICK, Boston, Massachusetts

10:30 DIFFERENTIAL DIAGNOSIS OF PELVIC PAIN

HOWARD C. TAYLOR, JR., New York, New York

11:10 INTERMISSION TO VISIT TECHNICAL EXHIBITS

11:40 BABY RAISING, SIMPLIFIED

WALTER W. SACKETT, JR., Miami, Florida

(Program arranged with Connecticut Chapter—American Academy of General Practice)

12:20 ALCOHOL AND NARCOTICS USE BY TEENAGERS

MR. ERNEST A. SHEPHERD, Hartford, Connecticut

(Program arranged with Association of Medical Examiners of Connecticut)

1:00 LUNCHEON—CITY ROOMS

INTERMISSION TO VISIT TECHNICAL EXHIBITS

Program Arranged with the Connecticut Society of American Board Surgeons

2:00 CONTROVERSIAL ASPECTS OF THYROID AND BREAST CANCER (with case reports)

GEORGE CRILE, JR., Cleveland, Ohio

3:30 Meetings of Sections of the Society and Guest Organizations

Section on Anesthesia
Section on Neurosurgery
Section on Ophthalmology
Section on Orthopedics
Section on Otorhinolaryngology
Section on Physical Medicine
Section on Proctology
Connecticut District Branch—American Psychiatric Association
Section on Radiology
Association of Medical Examiners of Connecticut
Connecticut Rheumatism Association

FROM THE GENERAL MANAGER'S OFFICE

William R. Richards, m.d., *General Manager*
160 St. Ronan Street, New Haven, Conn.
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James G. Burch
Assistant to General Manager

Josephine P. Lindquist
Director of Public Relations

CALL

ANNUAL MEETING OF THE HOUSE OF DELEGATES

The 1965 Annual Meeting of the House of Delegates will be held at the Statler-Hilton Hotel, Hartford, commencing at 10:00 o'clock in the morning of Tuesday, April 27

Following luncheon, the House will reconvene for the completion of business.

Ralph L. Gilman, President
Kenneth F. Brandon, Speaker of the House
Denis S. O'Connor, Secretary

INTRODUCTION OF RESOLUTIONS

Article V, Section 12, Par. 3 of the Bylaws of the Society Provides that:

All resolutions to be considered as regular business at any regular meeting of the House of Delegates must be in the hands of the Speaker not later than seventy-two hours before the opening of that meeting. All resolutions and recommendations published in the official agenda distributed to the members of the House prior to the meeting at which action is to be taken shall be considered as regular business. Resolutions presented later than seventy-two hours before the opening of a meeting will be referred for consideration as regular business by the House only when they are presented by the Council or accepted for consideration by majority vote of the delegates present. Any resolution which does not qualify in accordance with the aforesaid provisions for consideration as regular business may be accepted for action by a majority vote of the delegates present and, if so accepted, shall be referred at once by the Speaker to a reference committee. Any such reference committee shall consider resolutions referred to it and shall report, with recommendations to the House before adjournment of the meeting.

PROPOSED AMENDMENT TO THE BYLAWS

The following proposed amendment to the Bylaws was presented to the House of Delegates on December 9, 1964 and was tabled for consideration and action at the next regular meeting of the House of Delegates.

In accordance with the Bylaws, this amendment will be published in Connecticut Medicine, "on one or more occasions prior to the next meeting . . . at which meeting the amendment shall be taken off the table and acted upon by the House of Delegates."

INTRODUCED BY THE COUNCIL:

Article X, Section 3, Paragraph 1, to be amended as follows:

Par. 1. *Outline.* Separate "Delegates to State Medical Societies and Special Societies" to read "Delegates to State Medical Societies" and "Delegates to Special Societies."

Par. 13. (amend to read) *Delegates to State Medical Societies.* The Council shall elect annually two delegates each to the following state medical societies: Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont. The delegates elected shall be members of the Council or have been members of the Council at some time during the four years preceding their election. The terms of office of all such delegates shall be for one year, beginning July 1. The duties of these delegates shall be to attend meetings of the state medical societies to which they are assigned, to act as official representatives of The Society at such meetings, and to file informative reports with the Council on the proceedings of such meetings.

Par. 14. (add new paragraph) *Delegates to Special Societies.* The Council shall elect annually one delegate each to the Connecticut Hospital Association, the Connecticut Pharmaceutical Association, the Connecticut State Dental Association and the Connecticut State Nurses Association. The terms of these delegates shall be for one year, beginning at the annual meeting of The Society. Delegates to the named special societies shall either be officers of The Society or committee chairmen or members who are knowledgeable of the work of the special society to which they are delegates. The duties of these delegates shall be to attend meetings of the special societies, to act as official representatives of The Society at such meetings, and to file informative reports with the Council on the proceedings of such meetings.

Renumber present paragraphs 14 and 15 to become paragraphs 15 and 16.

Delegates To Annual Meeting

The Bylaws of the Society provide that each county association is entitled to one delegate in the House of Delegates for each thirty-five Active or Life Members in the association or fraction thereof based on the membership as of December 31st of the immediately preceding year. According to this, the quota of delegates from each county association who should attend the Annual Meeting of the House of Delegates which will be held in Hartford, April 27, 1965, and the Semi-Annual Meeting in December, 1965, is as follows:

COUNTY	MEMBERSHIP DEC. 31, 1964	OFFICIAL DELEGATES
Fairfield	912	27
Hartford	1096	32
Litchfield	136	4
Middlesex	117	4
New Haven	976	28
New London	197	6
Tolland	23	1
Windham	72	3

Election Of Councilors And Associate Councilors

Councilors and Associate Councilors, who shall serve for two years, shall be elected this year at the annual meeting of each of the county associations in Hartford, Middlesex, New London and Windham counties. In accordance with the Bylaws, each component association having over 750 members may elect one additional Associate Councilor. Therefore, the Hartford County Medical Association should elect a Councilor and two Associate Councilors each for a two year term.

No Councilor or Associate Councilor elected by a component association shall serve more than three successive terms of two years each in his respective office, but after a lapse of one term of two years, such Councilor or Associate Councilor shall be eligible for reelection.

Newly elected Councilors and Associate Councilors shall not assume office until after the Annual Meeting of the House of Delegates.

* * * *

At the Semi-Annual Meeting of the House of Delegates on December 4, 1962, Article VII, Section 2 of the Bylaws of the Society was amended by the addition of the following sentence after the term Councilor-at-large:

"In the event that both the Councilor and the Associate Councilor (s) from a county association cannot be present, the President of the county association may appoint a substitute councilor."

PLACEMENT OPPORTUNITIES

GP—Young man needed to join well-established group in Connecticut. Third member of group retired and another physician is needed to replace this doctor.

PUBLIC HEALTH PHYSICIAN: Opening for community health department; generalized clinical and administrative duties; entry position to field of public health. Liberal benefits including an outstanding retirement plan, paid vacation and sick time and insurances. No age or sex requirements. Connecticut license or eligibility for license required. Apply to Dr. Norton G. Chaucer, Director of Public Health, 56 Coventry Street, Hartford, Conn. Salary open.

OBS.-GYN.—Opportunity for Board eligible or Board certified Obstetrician-Gynecologist to join in a group of physicians in new building to be completed by July, 1965. Large University hospital and one other hospital close by.

STAFF PHYSICIAN — A fully accredited, well established comprehensive, 114 bed in-patient medical rehabilitation center has an opening for a staff physician. Internist or well experienced generalist, Connecticut license required. Liberal salary, pleasant 600 acre New England setting close to large university medical center.

SENIOR PHYSICIAN—for the Medical Service of the Connecticut Valley Hospital. Must have Connecticut license. Salary range $11,640 to $15,080—but could start above minimum if properly qualified. Housing and other fringe benefits. Contact Superintendent, Connecticut Valley Hospital, Middletown, Connecticut, Phone 347-5651.

ANY PERSONS INTERESTED IN THE ABOVE ARE ASKED TO COMMUNICATE WITH THE GENERAL MANAGER'S OFFICE, 160 ST. RONAN STREET, NEW HAVEN, CONNECTICUT 06511.

Clinical Medicine

Magnesium Deficiency And Delirium Tremens

Louis H. Nahum, M.D.

■ Until a satisfactory method is developed to anlyze any specific parameter knowledge lags. Our knowledge of electrocardiography developed rapidly once an instrument was devised by Einthoven, although some information was at hand before his time. The flamephotometer led to rapid strides in our knowledge of sodium and potassium metabolism. Isotopes have opened wide the field of intermediate metabolism and the electron microscope has revealed many of the mysteries of molecular structure. And now spectrophotometric methods have made magnesium determinations, formerly arduous and difficult, quite satisfactory. As a result, studies in magnesium metabolism have become accessible for clinical investigation.[1,2] We now know that the normal content of the serum varies between 1-8-2.2 m Eq per liter and that no close correlation exists between the severity of clinical symptoms and the serum level, largely because when the body is deprived of magnesium, it is avidly absorbed by the cells when administered. On the other hand, as the magnesium stores decline, the serum level may remain unchanged because it can be replenished from bone which holds half of the 20 grams which the body contains normally. Since, only the serum is accessible for study the information about the magnesium stores of the body can be inferred only in part from the serum levels and mostly from the symptoms which magnesium deficiency produces.

It is the merit of the experimental production of a syndrome that the symptoms are reproducible and if the experiment is properly carried out, the picture is not confused by other deficiencies frequently found clinically. This is especially true in magnesium deficiencies which hardly ever are found in a patient without some other associated deficiencies.

Pharmacologically the magnesium ion acts on the nervous system both centrally and peripherally. Centrally, a deficiency causes excitability, irritability, hallucinations and convulsions, while excess causes narcosis and is anticonvulsant. In the periphery magnesium seems to operate by an increase of acetylcholine which acting on blood vessels causes vasodilatation. On muscles it facilitates transmission of impulse at the end plate and causes an increase in contractility of the muscle. The opposite effect is produced by excess which like curare blocks transmission at the neuromuscular junction and causes muscular paralysis.

The true picture of magnesium deficiency has been extensively studied in rats.[3] They show a preliminary period of vasodilatation, then hyperirritability, excitability, muscular twitchings and fatal convulsions. In less severe cases there is stunted growth, malnutrition, extensive lesions in the kidney, cerebellum, degeneration of cortical cells as well as hepatic and myocardial degeneration. The symptoms are easily understandable if the pharmacology of magnesium is borne in mind.

A similar picture was long ago described in cattle the so called "grass staggers"[4] and can be found in man under those conditions in which malnutrition continues over long periods of time, such as occurs in malignant disease, renal disease, hyperthyroidism and hyperparathyroidism and chronic alcoholism. It can also be induced by active diuresis in cardiac disease, after ammonium chloride and mercurial diuretics or treatment of ascites caused by liver cirrhosis and of diabetic coma when it is treated by infusing large quantities of fluid containing some electrolytes but not magnesium.[5]

The symptoms in man, like in animals, initially are those of agitation, nervousness, ataxia, tremor and muscular twitchings. The patients develop facial and carpopedal spasm, positive Chvostek and Trousseau signs. These latter suggest hypocalcemia but will not abate without magnesium administration. Later stages of magnesium deficiency are mental disturbances such as delirium, confusions, excitement and even violent behavior. The last stage is stupor, coma and fatal convulsions.

A large number of cases of magnesium deficiency has been reported by Flink *et al*[6] most of whom were suffering from chronic alcoholism, though some were nonalcoholics. But all suffered from reduced intake or increased loss of magnesium such as occurs in patients with diarrhea, vomiting, gastric suction, profuse diuresis, all receiving large volumes of fluid replacement containing sodium potassium, calcium, glucose, but without magnesium. Flink points out that since the symptoms of delirium tremens so closely resemble those of magnesium deficiency, it is very probable that many are due to this deprivation since they actually recovered faster if they were treated by magnesium.

The clinical moral is clear that in alcoholics, malnourished subjects and those requiring large volumes of fluid replacement who show onset of a psychosis followed by muscular twitchings, fasciculations, rhythmic tremor or occasional convulsions, magnesium deficiency should be suspected and quickly and appropriately treated.

The treatment consists of parenteral administration of 1-2 grams 1M in 50 per cent solution four times a day for several days. Occasionally improvement will lag in which case it is supposed that the deficit is intracellular and until the intracellular magnesium is replenished, the symptoms will not abate. Some patients may be so depleted of their magnesium that symptoms may again recur if treatment is stopped too soon, but will ultimately be relieved by a second course of therapy. In the milder cases, food and oral administration of magnesium usually suffice to overcome the deficiency, since magnesium is readily absorbed from the gastro-intestinal tract without the aid of any hormone as for example, calcium requires.

In the therapy of magnesium deficiency it must always be borne in mind that in nutritional decline there probably exist other deficiencies as well, for example sodium and potassium which will also require replacement. In fact it is at times replacement of these latter ions by vigorous means, which may reveal or aggravate magnesium deficiency. In such situations crises could be avoided by giving magnesium at the same time either in the perfusion fluid or intramuscularly.

There are occasional situations in which the kidney may play a major role either in leading to magnesium deficiency or its excess in the body. A normal kidney will excrete all excess magnesium quantitatively in the urine. If tubular damage is present, magnesium will not be reabsorbed by the tubules and body stores can in this way become progressively depleted. On the other hand if glomerular filtration fails as in uremia, magnesium may pile up in the body and contribute further to the coma of the uremic syndrome.

It is clear enough that magnesium is a necessary constituent of all cells, that excess or deficiency of this ion occurs with a characteristic clinical picture. Especially, deficiencies are readily recognizable from the symptomatology and such deficiencies and can be quickly corrected once they are diagnosed. In chronic alcoholics and especially in delirium tremens correcting magnesium deficiency may be life saving, certainly it will shorten the illness and promote convalescence.

References

1. R. E. Randal, Jr., Rossmeisl E. C. and Bleifer, K. H.: Magnesium depletion in man. Arch Int. Med. 50: 257, 1959.
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3. Kruse H. D., Orent E. R. and McCollum E. V.: Studies on magnesium deficiency in Animals 1 Symptomatology resulting from magnesium deprivation J. Biol. Chem. 96: 519-539, 1932.
4. Vollens B. S.: Nutritional and metabolic disorders in cattle nutrition, Abstr. and Rev. 1: 621, 1932.
5. Marten H. E., Mehl J., and Wertman M.: Clinical studies of magnesium metabolism, M. Clin. North America 36: 1157, 1952.
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Strange is our situation here upon earth. Each of us comes for a short visit, not knowing why, yet sometimes seeming to divine a purpose. From the standpoint of daily life, however, there is one thing we know: That Man is here for the sake of other Men . . . Above all, for those upon whose smile and well-being our own happiness depends, and also for the countless unknown souls with whose fate we are connected by a bond of sympathy. Many times a day I realize how much my own outer and inner life is built upon the labors of my fellow men, both living and dead, and how earnestly I must exert myself in order to give in return as much as I have received.—*Albert Einstein.*

WOMAN'S AUXILIARY

President
Mrs. Charles M. Krinsky, New London

President-Elect
Mrs. William R. Richards, New Haven

First Vice-President
Mrs. James F. Jones, Danielson

Second Vice-President
Mrs. David O'Keefe, Hartford

Recording Secretary
Mrs. Harry Levine, Fairfield

Corresponding Secretary
Mrs. Hilliard Spitz, New London

Treasurer
Mrs. Stephen A. Hulme, West Hartford

Annual Meeting

The twenty-first annual meeting of the Auxiliary to the Connecticut State Medical Society since its organization on May 3, 1944 in Bridgeport, will be held at the Hotel America in Hartford on April 28th. The business meeting will be followed by a luncheon in the beautiful Plaza Room.

The annual meeting of the Woman's Auxiliary to the A.M.A. will be held in June at the Americana Hotel in New York City. Further information about this will appear in the March Bulletin.

Operation Follow-up

In January the Auxiliary was requested by the Editor and the Business Manager of Connecticut Medicine to help in making the Readership Survey more meaningful and effective by making follow-up calls to the doctors to urge them to fill in and promptly return the questionnaires. At a Board Meeting on January 19th the County Presidents agreed to fill this request. The results appear to be well worth the effort—the percentage of replies far exceeds most previous results of surveys.

Health Career Scholarships

High School seniors have by now decided what they will do after graduation. Those who have decided on careers in the field of health have made their applications to the school of their choice and are seeking means of financial assistance in achieving their goals. Our County Auxiliaries have by now held their fund-raising activities or are about to do so in the near future. Application forms have been sent out to interested students. If you know of any worthy and needy students, please refer them to a member of your county auxiliary and if you really think they would be a great asset to the health field, do give them a reference bearing this out. The selection of the winners is a difficult once since there are usually so many excellent candidates.

Disaster Preparedness

At the Annual Meeting in San Francisco last June the name of the Civil Defense committee was changed to the committee for Disaster Preparedness. The change was made to point up the fact that there are national and local disasters that require the help of many citizens in time of peace as well as war. During World War II there was great interest and enthusiasm in preparing our citizenry for dealing with the problem of what to do in case of attack —how to prepare for inquiries about loved ones in danger areas, how to help scattered families to re-unite, how to provide first aid, transportation, etc. When there seemed to be imminent danger of "H" or "A" Bomb attacks this interest was again aroused. Now we seemed to have been lulled into a sense of security, assuming it can't happen here.

Only within the past few months there has been a "natural disaster" in northern California and Oregon. There have been flood, tornado, and hurricane disasters in various parts of the United States in recent years. Not too long ago we had a grave flood condition right here in Connecticut.

It *is* necessary to be prepared. Our doctor's wives can help in this effort. In Merriam, Kansas a "Block Mother" plan was organized not only for a major disaster, but for the small disasters of children which occur on their way to and from school. The Red Cross is constantly looking for volunteers for their Disasters Committees, to be trained and ready in case of disaster. Nurses, social workers, and non-professional intelligent trained workers are needed for emergencies.

OBITUARIES

Robert A. Goodell, M.D.
1902 - 1965

Dr. Robert A. Goodell, Chief Medical Director of the Phoenix Mutual Life Insurance Company, a long-time member of the Connecticut State Medical Society and a resident of Wethersfield, died on January 25, 1965, at the age of 63, after a long illness.

A native of Windham, Vermont, he graduated from Brown University and Harvard Medical School, and served his internship at Hartford Hospital. He joined the Medical Department of the Phoenix Mutual in 1930 and had been head of the Department since 1950. He had served many years of active membership in the Association of Life Insurance Medical Directors, and the Medical Section of the American Life Convention.

Dr. Goodell was a member of the honorary staff of Hartford Hospital and also visiting physician at J. J. McCook Memorial Hospital. He had served on the Hartford Medical Society's Advisory Committee, the board of directors of the Connecticut Heart Association and the Connecticut Cancer Society, and on the Research Committee of the Hartford Hospital.

During World War II, Dr. Goodell served in the Navy as Chief of Medicine aboard the USS Samaritan, a hospital ship, in the Pacific and remained active in the Naval Reserve after the war. At the time of his death he held the rank of Captain (Ret.), and was Chief Medical Officer of the Connecticut Naval Militia. He was buried at the Arlington National Cemetery with full military honors.

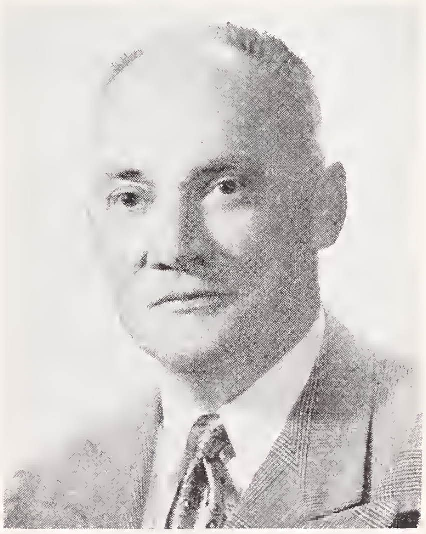
Dr. Goodell will be missed not only by his wife and family but also by his many friends and colleagues whose lives were enriched through their association with him.

William R. Bradley, m.d.

Forbes Sampson Adam, M.D.
1897 - 1965

On January 14 the people of North Canaan sustained a loss, which words cannot measure, in the personage of Dr. Forbes Sampson Adam. Only the overcrowded Adam homestead at the funeral services on January 17 and thence the hundreds of cards and letters to his widow Eleanor Tracy Adam and his three surviving children, could attest to the true feeling of the people of Canaan toward a man dedicated to his profession and the patients he served.

Forbes Adam was born in Canaan on April 11, 1897, the son of the late Charles and Edith (Judd) Adam. From primary education at the Halleck School and Phillip's Exeter Academy, he went on to receive his B.S. degree from Brown University in 1921 and Doctor of Medicine from Yale University School of Medicine in 1925. After interning at Western Pennsylvania Hospital in Pittsburgh, Dr. Adam set up practice in 1927 in his home town of Canaan, where he dedicated his life to the study and practice of medicine in behalf of his patients. For



the next 37 years he devoted his time and energy not only to his extensive practice but to the Geer Memorial Hospital as its first Chief of Staff—a post he held for 17 years—and to the study of advance medicine in a postgraduate course at Chicago's Cook County Hospital and a year's study in advance surgery at New York University's Bellevue Hospital.

He was a veteran of World War I and was a member of the East Canaan Congregational Church, the Litchfield County University Club, Housatonic Lodge No. 61, of Canaan, the Connecticut State Medical Society, the Zem Zem Shrine Club of Litchfield County, the Sphinx Temple in Hartford, and a 32nd degree Mason. Also, he was a member of the Ancient Accepted Scottish Rite of Waterbury, Doric Lodge of Perfection the Ionic Council, Princes of Jerusalem Corinthian Chapter of Rose Croix, Lafayette Consistory of Bridgeport.

He is survived by his wife, Mrs. Eleanor (Tracy) Adam, two sons, Attorney Samuel and William, both of Chicago; a daughter, Attorney Pamela, Canaan, and two grandchildren.

John R. Elliott, M.D.

In Memoriam

Hanrahan, William R.—Farmington; College of Physicians and Surgeons, 1905. Dr. Hanrahan was an obstetrician in Bristol for over twenty years. He was a member and former president of the Hartford County Medical Association and the Bristol Medical Society. He was a member of the Connecticut State Medical Society and the American Medical Association. He was active in civic and fraternal affairs in Bristol and was a founder and the first president of the Lions Club. Dr. Hanrahan was an incorporator of Bristol Hospital, and its chief of obstetrics for many years. He also was one of the founders of the Chippanee Country Club and a member of the Knights of Columbus and its Fourth Degree Assembly. Dr. Hanrahan died February 1, at the age of 83.

Hendricks, Albert L.—Woodbridge; Yale School of Medicine, 1907. Dr. Hendricks was director of the former New Haven Dispensary and police surgeon for many years. He also was a registered pharmacist in connection with his position at the Dispensary, where he served as purchasing agent for all drugs and supplies. He also was a former examining physician for the Connecticut State Department of Education. Dr. Hendricks was a member of the New Haven County Medical Association, the Connecticut State Medical Society, the American Medical Association, and a former member of the board of Connecticut Society for Crippled Children, New Haven Chapter. Dr. Hendricks died January 25, at the age of 84.

Walzer, Abraham—Bridgeport; Cornell Medical College, 1908. Dr. Walzer was a retired dermatologist after serving Bridgeport for many years. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Before coming to Bridgeport, Dr. Walzer resided in Brooklyn, New York. While there he was a member of the Kings County Medical Society and the Brooklyn Dermatological Society. He was associated with the Brooklyn Jewish Hospital. Dr. Walzer died January 26, at the age of 82.

Wrang, William E. — Middletown; Jefferson Medical School, 1919. Dr. Wrang was a general practitioner in Middletown for over thirty years. He was a veteran of World War I. Dr. Wrang was a member of the Middlesex County Medical Association, the Connecticut State Medical Society, and the American Medical Association. He was assistant medical examiner for Middletown and medical examiner for the town of Haddam. Dr. Wrang was chairman of the board of the Farmers' and Mechanics' Bank and a member of the advisory board of the Connecticut Bank and Trust Company. He was a former partner in the Boston Braves Baseball Club. Dr. Wrang died January 29, at the age of 69.

American Academy Of Medical Administrators A Non-Profit Professional Society

The American Academy of Medical Administrators announced today that Irving H. Cooper, Executive-Director of Hall-Brooke Hospital, has been elected as a Nominee. This honor is conferred upon those whose special qualifications in medical administration merit such recognition.

The Academy is an international professional society, some of the aims of which are to encourage and foster a scientific approach to the practice of medical administration; provide a means of intercommunication; promote, conduct, and foster educational courses in this specialty; establish and maintain a criterion of competency for those engaged in this profession; and to provide for recognition by means of fellowships, scholarships, and grants to those who are doing noteworthy service in this endeavor.

AROUND THE STATE

New Haven County

The 181st Annual Meeting of the New Haven County Medical Association will be held at the Waverly Inn, Meriden, on Thursday, March 18, 1965 at 3:30 P.M., the time scheduled for the Business Meeting.

The agenda for the business portion of the meeting includes the election of Officers, Committee members, Delegates and Alternate Delegates for the year 1965-1966. At this meeting the members will also adopt a revision of the By-Laws of the Association.

A social hour and dinner with the members of the Woman's Auxiliary will follow the business meeting. The retiring president will be presented with the usual inscribed placque following the dinner.

Members elected at the Semi-Annual Meeting in October will be guests of the Association. They will be introduced at dinner and requested to sign the Indoctrination Roster at the same time. Dinner is scheduled for about 7:00 P.M.

The after dinner program, arranged by the Program Chairman, Dr. Stewart Petrie, will include a presentation by Dean George A. Garratt, of the Yale University School of Forestry entitled "Therapy of the Outdoors."

New Haven County Medical Association Board Of Governors

A well attended meeting of the Board of Governors of the New Haven County Medical Association was held at the Colonial House, Hamden, Connecticut, on January 28, 1965. Twenty-three members of the Board and five honorary guest members were present.

The report of the January 20, 1965 Council meeting was covered in detail by the Councilor. Considerable discussion was evoked by certain items in the report. The Councilor and Associate Councilors will have messages to bring back to the next meeting of the Council.

On the agenda of the Board of Governors meeting were the following: A review of preparations for our Annual Meeting to be held on March 18, 1965 at the Waverly Inn; reading of the list of nominations for officers and members of the House of Delegates; report by Henry Caplan of pending Bylaw changes to be voted on that date; information by John Flynn, Chairman of the Credentials Committee of the approval of eleven candidates for election to membership; a letter from Alan Ryan, Chairman of the Committee on Athletic Injuries, telling of preparations being made for the Symposium to be held jointly with Middlesex County, at Wesleyan University in April; finally, a report, by the Clerk, of the luncheon at the Stratfield Motor Inn, in Bridgeport, before the House of Delegates meeting in December 1964. Twenty-seven Delegates, including two from out of County as our guests, spent a pleasant hour together before the meeting of the House.

The meeting adjourned for the usual Social Hour and Dinner.

News From Yale University School of Medicine

Dr. Byron H. Waksman, Professor of Microbiology, has been appointed Chairman of the Department of Microbiology at the Yale School of Medicine effective immediately.

He succeeds Professor Edward A. Adelberg, who stepped down as Chairman upon his appointment this past fall as an Associate Director of the Division of the Sciences at Yale.

Dr. Waksman, an authority on antibody response and immunity, was appointed to the faculty in 1963. Formerly he was an Associate Bacteriologist in the Neurology Service at Massachusetts General Hospital, a Consulting Associate Bacteriologist at the Massachusetts Eye and Ear Infirmary, and a faculty member at Harvard University Medical School.

He is known for his work on hypersensitivity, and the role of the thymus gland in the origin of antibody-forming cells. He also has made a major contribution in studies of degenerative diseases like multiple sclerosis.

A native of New York City, Dr. Waksman received his bachelor's degree from Swarthmore College, and earned his M.D. degree at the University of Pennsylvania Medical School.

He is a Fellow of the American Association for the Advancement of Science and the New York Academy of Science, and belongs to the American Association of Immunologists, the Society of American Bacteriologists, the Society for Experimental Biology and Medicine, the American Society for Microbiology, and the British Society for Immunology.

Personality Problems Of The Brain-Injured Child

"Personality problems of the Brain-Injured Child" was the title of an absorbing address by Dr. Jerome Schiller at the regular meeting of the Connecticut Association for Brain-Injured Children.

At the library of the Norwalk High School, an audience of professionals, educators and parents heard Dr. Schiller, psychologist, educator, and chief clinical psychologist for the Bridgeport Child Guidance Center speak at length.

Fully 10-12 per cent of full term babies are reported to suffer some minimal cerebral injury. Among other things, they suffer personality and organizational problems.

Dr. Schiller traced the comparative development of the youngsters from infancy through adolescence, indicating the differences from the norm, and the rational behind these differences. The hyperactivity, lack of impulse control, deprivation from group activities, immaturity, and other traits of these children were brought into a logical focus.

Certain conclusions were reached on the basis of today's knowledge:

1. Organic damage interferes with development of response patterns;
2. The deviant behavior represents the child's adjustment, and his vulnerability to environmental stress in certain areas; This manifests itself in such ways as hyperactivity, perseveration, sporadic loss of control and destructive episodes. Mentioned in therapeutics were structured, organized experiences to learn and control of the variables of time, space, level of task, language requirement, amount of stimulation, and screening out of non-relevant, interpersonal relationships.

Prior to the lively question and answer period that ensued, President Joseph Lasker invited those present to examine the extensive literature of CABIC, and to consider active membership. Program chairman Dr. Maximilian Trost announced the stimulating programs for the first Thursday evenings of March, April, and May, and then proceded to open the meeting to questions from the floor. The questions were challenging and plentiful, and were answered by Dr. Schiller in a direct, forthright manner. At the conclusion, a rising ovation was given Dr. Schiller. Coffee was served at the close of the meeting.

Clinical Clerkships In Chest Diseases

Annually the Connecticut Thoracic Society offers a limited number of clinical clerkships in chest diseases to medical students who have completed at least two years of medical school. The clerkships are for one or two months of supervised summer study at selected Connecticut hospitals. Stipends of $200 monthly will be awarded to approved applicants by the Connecticut Thoracic Society. Arrangements for room and board for the clerkship recipients will be made with the participating hospitals at no cost to the student.

Participating hospitals include: Gaylord Hospital, Willingford; Veterans Administration Hospital, West Haven; Cedarcrest Hospital, Newington; Laurel Heights Hospital, Shelton; Uncas-on-Thames Hospital, Norwich; and Yale-New Haven Medical Center, New Haven. Other hospitals with chest disease programs may be included by special arrangement.

Interested students can obtain application blanks and program outlines for each hospital from R. C. Edson, M.D., chairman, Committee on Medical Education and Research, Connecticut Thoracic Society, 634 Asylum Avenue, Hartford, Connecticut 06105.

Applications will be processed as received and should be in the hands of the committee no later than April 15.

From The Connecticut State Department Of Health

Gonorrhea cases reported in Connecticut during the month of January, 1965, totaled 199, up from 187 in January, 1964, and 151 in 1963, said Franklin M. Foote, M.D., Commissioner, Connecticut State Department of Health. The rising trend shown is indicative for the past 3 years as a whole; in 1962 there were 1805 gonorrhea cases reported, 2,000 in 1963 and 2,281 in 1964, Dr. Foote noted.

The rapid growth of the population in the age group 16 to 25, wherein the infection is most common, may play a part in the rise.

One case of typhus was reported from Stamford in a person who had recently visited the West Indies. The last previous case in Connecticut was one in 1958. Only 14 have been recorded since 1935.

Salmonella infections were 11 in the week, up from 6 the week before. The fairly steady flow of this disorder of the digestive system amounted to 433 reported cases in 1964. Dr. Foote pointed out that the salmonella group of bacteria can cause serious, sometimes fatal illness. The germs enter the body through the mouth, carried by food, hands or other objects placed there. Personal cleanliness, and careful handwashing after use of the toilet are imperative in controlling this preventable disease.

Some other diseases that rose were strep throat, up to 680 from 664, influenza 215, up from 132, German measles 28, up from 24, and infectious mononucleosis 24, compared with 23.

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Influenza was reported in 108 people, down from 150 the week before.

Graduate Summer Session Of Statistics In The Health Sciences

June 28 to August 6, 1965

The Department of Epidemiology and Public Health, Yale University School of Medicine is the host institution for the eighth cooperative Graduate Summer Session of Statistics in the Health Sciences, to be held June 28 to August 6.

The Summer Session, under a grant from the National Institutes of Health, is offering courses at nearly every academic and experience level. It is designed to meet some of the educational and training needs of men and women engaged in work in health and health-related agencies, and those preparing themselves for such work.

The courses and instructors for the 1965 Summer Session are: Statistical Methods in Public Health, Hugo Muench, Jr. (emeritus, Harvard); Health Data as Research Resources, Robert Patton (N.Y. State Dept. Mental Hygiene, Albany); Biostatistics in the Health Sciences, Theodore Colton (Harvard); Demographic Methods in Public Health, C. A. McMahan (LSU); Statistical Methods in Epidemiology, Bernard Greenberg (Univ. North Carolina); Sampling Techniques in the Health Sciences, Alan Ross (Johns Hopkins); Statistical Methods of Biological Assay, C. Philip Cox (Iowa State); Advanced Biostatistics in the Health Sciences, Franklin Graybill (Colorado State); Statistical Human Genetics, R. C. Elston (Univ. North Carolina); Non-Parametric (Distribution-Free) Methods, James Boen (Univ. Minnesota); Biomathematics, H. Robert van der Vaart (North Carolina State); and Special Topics in Epidemiology and Biostatistics, Chin Long Chiang (Univ. Calif., Berkeley).

There will also be a math refresher session conducted by Dr. Richard Remington, Associate Professor of Biostatistics, University of Michigan.

A special SEMINAR IN BIOSTATISTICS will be conducted by Dr. W. J. Youden, from the Applied Mathematics Division, National Bureau of Standards, Washington, D.C.

Standard Nomenclature Of Sports Injuries

Prepared by

Committee On The Medical Aspects Of Sports

To gain a more accurate picture of nature, rate, and cause of sports injuries so that effective preventive measures can be determined, the development of a standard nomenclature of sports injuries has been undertaken by the American Medical Association. A Subcommittee on Classification of Sports Injuries has been appointed by the Board of Trustees for this purpose at the request of the AMA Committee on the Medical Aspects of Sports. Available statistics do not necessarily depict valid information since injuries in the athletic setting generally are not classified in a meaningful and uniformly understood manner.

The nomenclature is to be restricted to those illnesses and injuries that have special significance in athletics. It is intended for functional and instructional use by physicians, coaches, and trainers, as well as researchers and insurance carriers. Training room terms such as "charley horse" and "hip pointer" will not be discarded but will be related to, and serve as synonyms for, medical entities. Terms such as "shin splints" and "concussion" which are not definitive will receive special attention. Cross refernce will permit easy entry to the nomenclature with either medical or athletic terminology.

The information is to be classified by anatomical region, pathology, and degree of severity, and coded for precise and nationally uniform reporting and analysis. Where indicated (e.g., problems of mental, dermatological, or environmental origin), additional appropriate classification will be devised.

The first progress report will be available by April 1965, according to Alexius Rachun, M.D., Chairman, of Ithaca, New York. The other members of the Subcommittee are Fred L. Allman, Jr., M.D., Atlanta, Georgia; Martin E. Blazina, M.D., Los Angeles, California; Donald L. Cooper, M.D., Stillwater, Oklahoma; Richard C. Schneider, M.D., Ann Arbor, Michigan.

Doctor's Office

Matthew P. Campione, M.D., announces the removal of his offices for the practice of general surgery to 142 Meadow Street, Naugatuck.

Henrly L. Haines, M.D., Frederick L. Dey, M.D., and Richard A. Loiacono, M.D., announce the association of Raymond A Gaito, M.D., in the practice of ear, nose and throat endoscopy and maxillofacial plastic, head and neck surgery at 464 Ocean Avenue, New London.

Siegfried J. Kra, M.D., announces the opening of an office for the practice of internal medicine and arthritis at 2 Church Street, South, New Haven.

Important announcement for Doctors

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A revolutionary new automated service which will relieve you of handling billings, accounts receivable and cash disbursements is now available to all physicians in Connecticut (except Fairfield County). Known as "Medac," the system employs Hartford National's computer equipment to do in minutes what now takes hours of your staff's time.

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Affiliated with Departments of Psychiatry and Neurology of the College of Physicians and Surgeons, Columbia-Presbyterian Medical School, New York City.

First year spent at Medical Center, New York, N. Y., second and third years at Silver Hill, New Canaan, Connecticut. Applicants also considered who have completed one year or more of training elsewhere for the second and third year program.

Emphasis placed on training of physicians for private practice of phychiatry, under experienced preceptors, Board Diplomates, with teaching background.

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For further information and application form, write: **William B. Terhune, M.D., Medical Director, The Silver Hill Foundation, Box 1177, New Canaan, Connecticut.**

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Tobacco Said To Be Implicated In Cancer Of Mouth And Throat

A Louisville surgeon said recently he has evidence "more convincing" than that offered by previous studies of a link between tobacco and cancer.

Condict Moore, M.D., of the University of Louisville School of Medicine, said the results of a seven-year study "implicates tobacco in the formation of most mouth-throat cancers."

His study and conclusions were reported in the current Journal of the American Medical Association.

Data for the study, Dr. Moore said, came from follow-ups on 102 "cancer susceptible" smokers, all of whom had apparently been cured once of cancer of the mouth or throat.

These patients were divided into two groups—those who continued to use tobacco and those who quit.

Among the 65 patients who continued, 21 developed cancer a second time in what Dr. Moore termed the "tobacco area"—the mouth, pharynx and larynx. But only two among the 37 quitters developed new-throat cancers.

"Such a finding would be quite arresting in a laboratory study, but in a human study it is doubly so," he said.

"The study implicates tobacco in the carcinogenic process more convincingly than previous studies because it approximated an ideal planned human experiment, although it was actually only an observation of a natural occurrence."

On the basis of his findings, Mr. Moore concluded:

"In those smokers who do get mouth-throat cancer, tobacco appears to play a necessary, causative role in 90 per cent of them.

"Smokers who stop after their first mouth-throat cancer run only a small risk of getting another.

"Another surprising result of the study," he continued, "is that people in our locality who are developing mouth and throat cancer smoke cigarettes, and those who continue to smoke and develop second cancers are nearly all cigarette smokers.

"Most older reports leave the impression that only cigar and pipe smokers, or chewers, generally acquire mouth cancer.

"It would now appear that tobacco in any form can cause cancer of the mouth and throat."

Dr. Moore said precautions were taken to make sure that the survey did not inadvertently include recurrence of the old cancer as opposed to formation of a new cancer.

Only those tumors which appeared three years after the first had been removed by surgery or radiation and which were in a different area of the mouth or throat were incorporated in the study.

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Side Effects: Constipation, dizziness, dysuria, headache, hyperglycemia, hyperuricemia, leukopenia, muscle cramps, nausea, purpura, thrombocytopenia, transient myopia, urticaria, vomiting and weakness.
Average Dosage: One tablet (100 mg.) daily with breakfast.
Availability: Tablets of 100 mg. in bottles of 100 and 1000.
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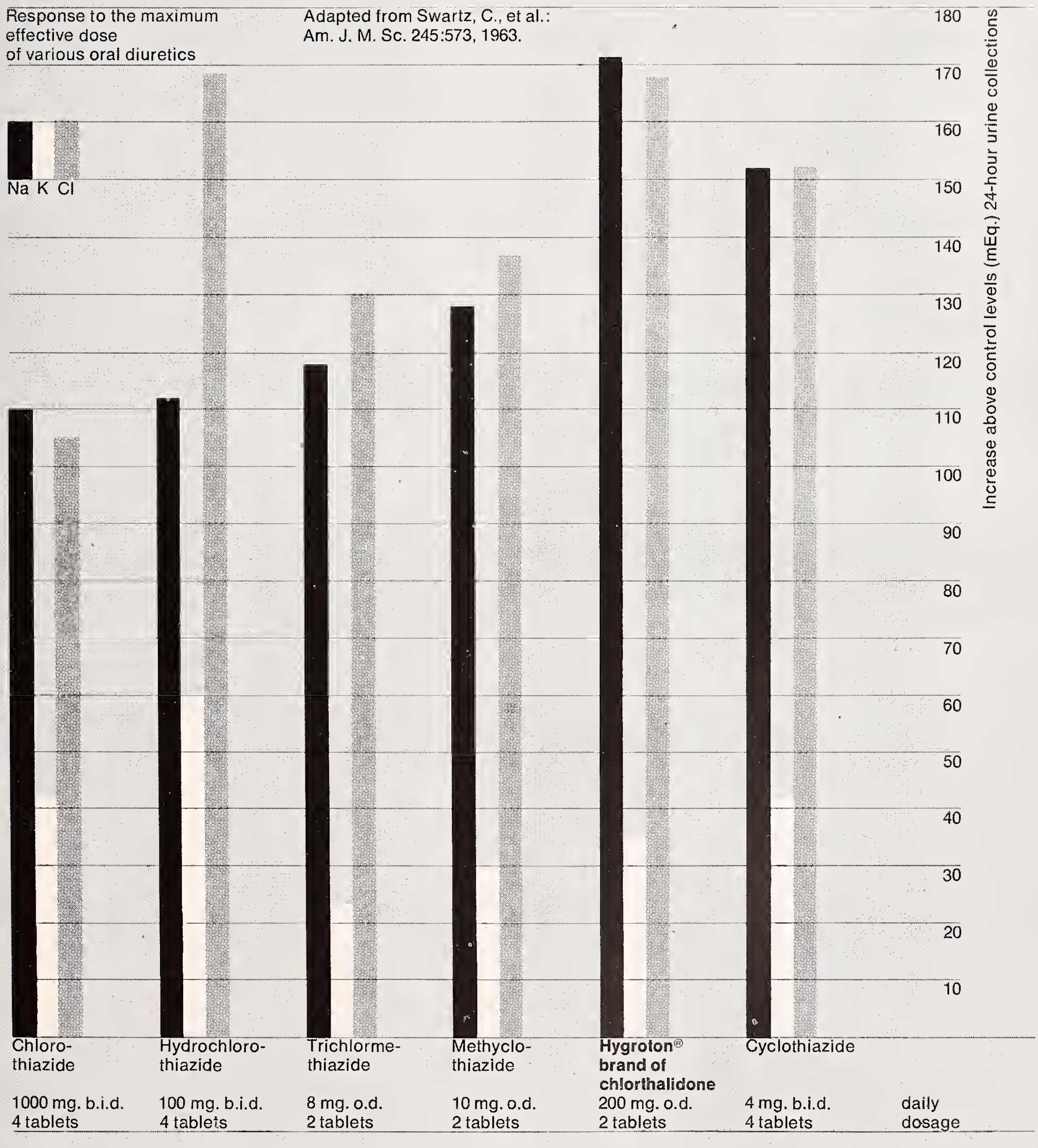

Response to the maximum effective dose of various oral diuretics

Adapted from Swartz, C., et al.: Am. J. M. Sc. 245:573, 1963.

Special Notices

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Director—Henry N. Wagner, Jr., M.D., F.A.C.P.

Fees: A.C.P. Members, $60; Nonmembers, $100.

Minimal registration: 50; Maximal registration 175.

Note: Registration forms and requests for information are to be directed to Edward C. Rosenow, Jr., M.D., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pa., 19104.

COLLEGE CONFERENCE ON PREVENTION AND MANAGEMENT OF SPORTS INJURIES

Cosponsored by

Wesleyan University, Middlesex County Medical Association, and New Haven County Medical Association At Wesleyan University

Tuesday, April 6, 1965

9:00 A.M.—Registration—$1.00 fee includes luncheon.

9:15 A.M.—Introduction—Allan J. Ryan, M.D., Meriden.
Welcome—Clair B. Crampton, M.D., College Physician, Wesleyan University; Dr. Butterfield, President of Wesleyan.

9:30 A.M.—Field Examination of the Football Player—Allan J. Ryan, M.D., Meriden, Conn.

10:00 A.M.—Panel Discussion Conditioning the Athlete for Competition — Discussion Leader — Steve Witkowski, Head Trainer, Wesleyan University.
Panelists—Richard K. Cole, Associate Professor of Physical Education Athletic Therapist, Univeristy of Rhode Island;
Richard Wargo, Head Trainer, University of Connecticut;
Stanley C. Plagenhoef, Associate Professor of Physical Education, Wesleyan University.

11:00 A.M.—Management of Shoulder Injuries in Athletes—Edward J. Coughlin, M.D., Williamstown, Massachusetts.

11:45 A.M.—Management of Head Injury in Athletes—Salvatore Mangano, M.D., Assistant Team Physician, Harvard University.

12:30 P.M.—Luncheon.

1:30 P.M.—Weight Training and Isometric Exercises in Athletics—Professor Victor F. Obeck, Director of Athletics, New York University.

2:00 P.M.—Panel Discussion—Rehabilitation of the Injured Athlete—A Team Effort—Discussion Leader—Dr. Isao Hirata, Jr., Team Physician, Yale University.
Panelists—William Dayton, Head Trainer, Yale University.
Carmen Cozza, Head Coach, Yale University.

3:00 P.M.—The Role of the Official in Injury Prevention—Henry Roche, New Haven, Conn.

3:30 P.M.—Management of Foot Problems in Athletes—A. A. Savastano, M.D., Chairman, Rhode Island State Medical Society Committee on Athletic Injuries, Providence, Rhode Island.

4:15 P.M.—Question Period.

CONNECTICUT DIABETES ASSOCIATION ANNUAL MEETING

April 28, 1965

Dr. Max Ellenberg of New York City will be the guest speaker at the Annual Meeting of the Connecticut Diabetes Association which will be held during the annual meeting of the Connecticut State Medical Society at the Statler Hotel in Hartford on Wednesday, April 28 at 3:30 p.m. His topic will be "Diabetic Neuropathy."

Dr. Ellenberg is Associate Attending Physician, The Mt. Sinai Hospital, New York City, and Senior Editor of "Clinical Diabetes Mellitus." He is President of the New York Diabetes Association and Instructor in Medicine, College of Physicians and Surgeons, Columbia University.

POSTGRADUATE EDUCATION COURSES

Sponsored By

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL

April 26-29, 1965

14th Hahnemann Symposium, Mechanisms and Therapy of Cardiac Arrhythmias—Leonard S. Dreifus, M.D.—Sheraton Hotel.

July 26-30, 1965

Interpretation and Therapy of Cardiac Arrhythmias—Leonard S. Dreifus, M.D.—Hahnemann CVI Bldg.

November 22-24, 1965

15th Hahnemann Symposium, Cancer Chemotherapy: Basic and Clinical Applications—Isadore Brodsky, M.D.—Sheraton Hotel.

December 8-10, 1965

A Hahnemann Symposium, New Concepts in Gynecological Oncology—George C. Lewis, M.D.—Sheraton Hotel.

April 20-23, 1966

16th Hahnemann Symposium, Arterial Occlusive Disease—Albert N. Brest, M.D.—Marriott Motor Hotel.

December, 1966

17th Hahnemann Symposium, Nutritional Dysfunction—Donald Berkowitz, M.D.—Sheraton Hotel.

SPECIAL LECTURE SERIES ON "CORNEO-PLASTIC SURGERY"

May 24-28, 1965

Sir Benjamin Rycroft, O.B.E., M.D., D.O.M.S., F.R.C.S., Clinical Director of the Pocklington Eye Transplantation Research Unit, Royal College of Surgeons of England, will deliver a series of five lectures on "Corneo-Plastic Surgery" May 24-28, 1965. The schedule and titles are:

1. Modern Technique in Keratoplasty
2. The Surgery of Ptosis
3. The Surgery of Lacrimal Obstruction
4. The Surgical Reconstruction of the Socket
5. Ocular Pemphigus

Fee for each lecture is $15.00. For registration, please send check to: Mrs. Tamar Weber, Registrar, Institute of Ophthalmology of the Americas, New York Eye and Ear Infirmary, 218 Second Avenue, New York, N. Y. 10003.

POSTGRADUATE EDUCATION IN DIABETES MELLITUS

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Tuesdays — 8:00 A.M.-8:50 A.M.

April 6, 1965—"Management of the Juvenile and Adult Patient with Diabetes Mellitus"—Abraham H. Kantrow, M.D., William S. Norton, II, M.D., Charles Weller, M.D.

April 13, 1965—"The Diagnosis of Diabetes Mellitus"—Gerald J. Friedman, M.D., Felix A. Silverstone, M.D.

April 20, 1965—"Diabetic Acidosis" — Norman Deane, M.D., Kermit L. Pines, M.D. (In arrangement).

April 27, 1965—"Current and Future Trends in Diabetes Mellitus"—Rachmiel Levine, M.D.

May 4, 1965—"Complications of Diabetes Mellitus" — Max Ellenberg, M.D., Harold Rifkin, M.D.

The assistance of the Public Health Service, Department of Health, Education and Welfare is acknowledged.

Harold Rifkin, M.D., Chairman, Clinical Society.
Stanley S. Bergen, Jr., M.D., Lewis C. Park, M.D.,
Co-Chairmen, Professional Education Committee.
New York Diabetes Association, Inc.
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AMERICAN CANCER SOCIETY 1965 SCIENTIFIC SESSION

Drake Hotel, Philadelphia, Pennsylvania

June 16, 1965

The American Cancer Society Scientific Session will be held at the Drake Hotel in Philadelphia on June 16, 1965.

This symposium on "Hormones and Chemotherapy For Cancer—A Critical Appraisal, is open to all members of the medical and dental professions and students. There is no advance registration or registration fee.

Nationally prominent physicians and surgeons will present papers and discuss them.

The opening session will be devoted to a paper by Dr. James Bonner on "The Molecular Biology of Development."

STROKE SESSION PLANNED AT AHA SCIENTIFIC SESSIONS

October 15,17, 1965

A one-day scientific session on stroke will be featured in the program of the American Heart Association's 1965 Scientific Sessions, to be held October 15-17 at the Americana Hotel, Bal Harbour, Florida. The session on Stroke will take place Saturday, October 16.

Neurologists, neuropathologists and neurosurgeons are invited to submit abstracts of papers for this session. Although previous AHA Scientific Sessions have included sessions on Stroke for the clinician primarily, the 1965 event will emphasize the presentation of original investigative work in the cerebrovascular field.

The session was recommended by the AHA's Coordinating Committee on Nationwide Stroke Program to make it possible for neurologists, cardiovascular surgeons and cardiologists to exchange and coordinate their experience and thinking in this area of research and treatment.

Another highlight of the session will be the George E. Brown Memorial Lecture, one of the three named lectures given at the AHA Scientific Sessions. This will be delivered by Dr. James F. Toole, Chairman, Department of Neurology at Bowman-Gray School of Medicine of Wake Forest College, Winston Salem, North Carolina. His subject will be: "Inter-Arterial Shunts in the Cerebral Circulation."

The deadline for receipt of abstracts is May 15, 1965, and should be based on original investigations related to cerebrovascular disease. Forms for submitting abstracts may be obtained from Richard E. Hurley, M.D., American Heart Association, 44 East 23rd Street, New York, N. Y. 10010.

BOOKS RECEIVED

Books received for review are acknowledged in this department and such acknowledgement must be regarded as a sufficient return for the courtesy of the sender. Selection will be made for review in the interests of our readers and as space permits.

Fundamentals Of Orthopaedics. By John J. Gartland, A.B., M.D., W. B. Saunders Co., Philadelphia and London, 1965, 338 pp. Illustrated. $8.00.

Pulsatile Blood Flow. Proceedings of the First International Symposium on Pulsatile Blood Flow, April 11-13, 1963. The Presbyterian Hospital, Philadelphia. Edited by E. O. Attinger, McGraw-Hill Book Co., New York, 462 pp. Illustrated. $17.50.

NEW BOOKS IN REVIEW

DISEASES OF THE HEART AND BLOOD VESSELS: NOMENCLATURE AND CRITERIA FOR DIAGNOSIS, Sixth Edition. By the Criteria Committee of the New York Heart Association, Inc. Little, Brown & Company, Boston, Massachusetts, 440 pp., Illustrated. $5.50.

Reviewed by: LOUIS H. NAHUM

This book is dedicated to the memory of John Wykoff "who did much to develop the New York Heart Association" and to Harold E. B. Pardee "whose painstaking and expert supervision of the book for the first thirty years of its existence has been a contribution to cardiology of incalculable value and significance." In this book we find integrated the ever-increasing profusion of new data on cardiovascular disease into a clinically usuable set of terms and rules. Many changes appear since the last edition which reflect the numerous additions to the understanding of cardiovascular disease over the last decade. For this reason the volume has grown in size even though there has been omitted from the previous edition the physical examination of the heart and criteria for electrocardiographic instrumentation.

The subject matter has been rearranged and divided into five principal parts: I. the cardiac diagnosis; II. the vascular diagnosis; III. the pathologic diagnosis; IV. the roentgenologic diagnosis; and V. the electrocardiographic diagnosis. These parts have in turn been subdivided into a total of thirty-three chapters. There is a short chapter, Uncertain Diagnosis. Set apart in a single chapter is the Functional and Therapeutic Classification. The Vascular diagnosis which first appeared in the fifth edition, like cardiac diagnosis, is also subdivided into etiologic, anatomic, physiologic, functional and therapeutic areas.

The section on pathologic diagnosis is both disease oriented and structure oriented, and has resulted in the introduction of three new chapters, atherosclerotic coronary heart disease, hypertensive heart disease and pulmonary heart disease.

No code numbers of the Standard Nomenclature For Diseases and Operations have been included in this edition because the terminology is in a trial period of general use. However, if users of this book wish to utilize it both as a classification and as a numerical index, it still can be used as is or adapted fairly easily to any digital system of classification.

The scope of the book can be seen from the numerous illustrations. There are fifty-seven in pathology, thirty-seven in roentgenology and thirty-three in electrocardiography.

This book has admirably succeeded in three objectives. It successfully helps to integrate the profusion of new data into a clinically usable set of diagnostic terms with rules for their use. It clarifies cardiovascular communication and frees it from ambiguity on an international scale. It provides an accurate base from which differential diagnosis of cardiovascular disease can be made more quantitative.

All specialists, general practitioners, residents, interns and students will find that this edition provides an indispensable up-to-date nomenclature and set of criteria for cardiovascular diagnosis.

THE IMMUNOLOGICALLY COMPETENT CELL. Edited by G. E. W. Wolstenholme, Ciba Foundation Study Group No. 16, and Julie Knight, B.A., Little, Brown & Company, Boston, 1963. 104 pp., 18 illustrations, price not specified.

Reviewed by: VICTOR L. SZANTON

This compact volume is one of the Ciba Foundation Study Group projects. It represents the proceeds of a one day session in honor of Sir Macfarlane Burnet, on the nature and origin of the immunologically competent cell. The Study Group membership consists of 22 scientists representing world wide immunology. The entire volume consists of 6 lectures together with comments, questions and answers referable to each of the lectures.

Medawar opens the meeting with a definition of items which is in order. To him, the immunologically competent cell refers to the cell responsible for the specific component of an immunological response and further, that the specific component is that which varies from one response to another in accordance with the nature of the antigen that it calls forth. He then discusses the different tests of immunological competence and points up the fact that the small lymphocyte, for example, is an immunologically competent cell and that the delayed type inflammatory intradermal skin reaction in instances provides a method for choosing homograft donors.

His discussion lays the ground work for the day's discussion which consists of the recognition of these cells, their roles, the role of cytophylic antibodies and the role of the thymus in immunologic competence. Careful reading of this report gives one insight into the problems involved in transplantation procedures as well as the role of the immunologically incompetent cell in carcinogenesis.

It is not surprising that the volume gives rise to more questions than it answers, such is the nature of the complex problem at hand. A panorama of experimental work is cited on the rat, mouse, rabbit, guinea pig, fowl, etc. At times the reader may wonder at the lack of uniformity or experimentation on the same subject matter. This varies, however, as do individual finger prints. So long as we seek the simplicity of uniformity as a common denominator, so long shall we be frustrated accordingly.

This small 104 page volume represents one day but it might as well be the size of James Joyce's "Ulysses." For those who wish the challenge of a tight little book that requires three readings in the still, small hours of the night to yield comprehension, this is it!

EXPERIENCE IN RENAL TRANSPLANTATION, by Thomas E. Starzl. W. B. Saunders Company, Philadelphia and London, 1964, 383 pp., illustrated. $17.00.

Reviewed by: LOUIS H. NAHUM

This volume is an account of a brief but intense experience with transplantation of human kidneys into sixty-four cases and of baboon kidneys into six patients. The operation required an institutional effort in which every major clinical and preclinical staff had strong representation. The book

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helps to define the indications, technical requirements, limitations and causes of failure in this institution. There are a large number of failures and it is obvious that the procedure is not ready for general use but must still be considered fundamentally experimental.

There is a chapter on the ethical and moral issues involved in a clinical undertaking of this kind. But regardless of whether it is not yet clear what the place is for renal hetero and homotransplants, the data accumulated must enrich a wide spectrum of basic medical science. A person with uremia is not risking anything in having a normal kidney transplanted even if it doesn't take: on the other hand, an occasional patient does succeed in having a relatively healthful existence for as much as five years. Accordingly, the study should be continued, but if such an isolated successful result will lead to a stampede of uncontrolled activity in this area, the danger of discrediting the whole procedure is very great.

INDUSTRIAL AND TRAUMATIC OPHTHALMOLOGY. 12th Annual Symposium of the New Orleans Academy of Ophthalmology, February 10th to February 15th, 1963. The Publication Committee: James H. Allen, M.D.; C. L. M. Samson, M.D.; George S. Ellis, M.D. With contributions by: Arthur H. Keeney, M.D.; Hedwig S. Kuhn, M.D.; Roderick Macdonald, Jr., M.D.; Frank W. Newell, M.D.; Joseph F. Novak, M.D.; Ralph W. Ryan, M.D.; and Lorenz E. Zimmerman, M.D. C. V. Mosby Company, St. Louis, Missouri, 318 pp. $14.50.

Reviewed by: R. M. FASANELLA

This symposium is presented principally for ophthalmologists but will be of great help to especially physicians and surgeons, safety and industrial engineers concerned with the prevention and care of injuries in industry and on the road.

For those who own "Industrial Ophthalmology" by Hedwig S. Kuhn and have kept up with ophthalmic and safety literature since the publication of Kuhn's fine book, there is no need to own this symposium. However, for those who have not done so, for those who are concerned with industrial, traumatic, and medical-legal cases related to industry and automobile trauma, this book will be a welcome reference book.

For me, there was little that was new but I enjoyed especially the round table discussion because the questions served to crystallize the total symposium.

Something Missing From Ophthalmologist's Tray

Diagnostic procedures have multiplied, many have become more complex, the significance of some has changed, and overall they have become more expensive. Therapy has undergone its own revolution. . . . In the drug field also there have been more changes in the last 50 years than in all previous history. Few of the drugs widely used only some 30 years ago are now employed at all. For example, I recently noticed that the heavily laden tray of an ophthalmologist did not even have Argyrol on it—this staple of the relatively recent past. Most new therapeutic developments have proved more expensive than the less effective therapy of the past, and this fact has, of course, exerted profound effects on medical practice.—Edwin P. Jordan, M.D., Executive Director, American Association of Medical Clinics, in *Medical Annals of the District of Columbia,* 33.3 (Mar.) 1964.

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1965 MEETINGS

March 18—181st Annual Meeting of the New Haven County Medical Association to be held at the Waverly Inn, Cheshire, Connecticut beginning at 2:30 p.m.

April 27-29—173rd Annual Meeting of the Connecticut State Medical Society to be held at Statler-Hilton Hotel, Hartford, Connecticut.

September 24—40th Clinical Congress to be held in Mary S. Harkness Auditorium at the Yale University School of Medicine, New Haven. The program will be devoted to "Advances in the Treatment of Infection" and "Advances in the Treatment of Shock."

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REFERENCES: 1. Epstein, J. H.: Am. J. of Gastroent., 37:295, March, 1962. 2. Breidenbach, W. C.: Investigative Clinical Report, March, 1961. 3. Young, R., and Sun, D. C. H.: Ann. N. Y. Acad. Sc., 99:174, Feb., 1962. 4 Slanger, A.: Journal of New Drugs, 2:215, July-Aug., 1962. 5. Posey, E. L., Jr.: Am. J. Dig. Dis., 7:863, Oct., 1962.

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Transplants Of Hairy Scalp Used To Cover Bald Spots

Transplants of many small pieces of hairy scalp have been used successfully to regrow hair on bald spots in the same individual, according to a report in the current Archives of Dermatology, published by the American Medical Association.

Dr. Samuel Ayres III, Beverly Hills, California, described the technique which he has performed on 53 patients over a two and a half year period.

The technique is "a definitive and, at times, dramatically effective means of permanently redistributing the scalp hair in such a way as to improve cosmetically, in varying degrees" the loss of hair termed male pattern baldness, Dr. Ayres said.

In this type of baldness a receding front hair line develops into a bald area on top of the head leaving a border of hair around the sides and back of the scalp.

Dr. Ayres said at times he used skin grafts so small they only had two or three hair follicles but the average graft contains 10 to 15 hairs. Although relatively few grafts may be done at a session, he explained that he has not infrequently performed 40, 50, or 60 grafts and occasionally 75 to 100 or more in patients who were highly motivated.

The total number of grafts required to cover a bald area may vary from only 20 to 30 to as many as 300, 400, 500 or even considerably more for relatively complete coverage of extensive baldness as long as the supply from the fringe hair is adequate, according to Dr. Ayres.

The proper placing of the grafts requires meticulous attention to detail, he added.

Although the procedure is tedious for both the patient and the physician, he said, it is an office surgical procedure and discomfort is limited to that associated with anesthesia.

Even when the grafting is pursued as rapidly as feasible, at least several months must elapse before definite cosmetic results can be seen, it was pointed out. Dr. Ayres also cautioned that at least a barely discernible scar must necessarily result when the full thickness of the skin is cut through. However, he said, if done properly, an entirely acceptable result can be obtained especially when the covering effect of the subsequent hair growth in the grafts is taken into account.

The permanence of the results is contingent upon obtaining grafts from the scalp area not subject to this type of baldness, Dr. Ayres continued, and, inasmuch as the exact extent and pattern varies among individuals, the grafts must be obtained from within the area which is clearly unaffected.

Although nothing can be done to prevent the progression of this form of baldness, "a source of great distress to many men," Dr. Ayres said, additional grafting can be performed as required to compensate for the continued loss.

Other conditions which could be treated by this technique include bald spots due to burns, cuts, or other injuries, he added.

Common diffuse thinning of the hair in women is not amenable to this treatment, he said, but modified male pattern baldness as seen in some women can be handled in the same manner.

Male pattern baldness is a hereditary growth pattern and not a disease, Dr. Ayres pointed out in discussing the nature of the condition.

It is now a well-recognized fact that there is a propensity of certain scalp hair follicles in the adult male to become progressively transformed into follicles producing fine hairs rather than coarse hairs throughout life, he said. This is a gene-determined inherent quality of each individual hair follicle in those men having this hereditary predisposition, he continued.

"It is triggered by a *normal* adult male androgen (sex hormone) level and is completely unrelated to such factors as scalp circulation, dandruff, scalp muscle tension, or the wearing or nonwearing of hats," he said. "Male pattern baldness, occurring in an adult male, is *not* an expression of *excess* androgen production, reassuring as this popular fallacy may be to some bald men."

Dr. Ayres said the technique he used with modifications in only a few minor details was developed by Dr. Norman Orentreich, New York City, "to whom full credit is due."

Dr. Ayres is associate clinical professor of dermatology, University of Southern California School of Medicine.

AMA Describes Chiropractic As 'Career In Cultism'

Five of seven schools of chiropractic in the United States, which were contacted, do not conform to their own professional standards for admission, according to a report of the American Medical Association's Department of Investigation.

The schools and two chiropractic organizations claim that a high school diploma or equivalent training is required for admission. There are 15 chiropractic schools in the United States.

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To evaluate these claims, a study of this question was undertaken in the summer of 1963. Applications for admission were sent to each of seven chiropractic schools from persons represented as undesirable prospects and lacking a high school diploma. The seven institutions were supposedly better schools and were selected to achieve a balanced geographical distribution.

"This study indicates that the actual admitting practices followed by five of the seven schools contacted do not meet the professed standards set up by the two chiropractic organizations, as well as those standards that the schools have set for themselves, according to their own catalogues," a report in the current AMA Journal said.

"Despite the many declarations by chiropractors that their schools are professional in character, the study indicates that one does not have to be a high school graduate to be admitted to . . . chiropractic schools. Yet, upon graduation, these persons are issued diplomas which ostensibly confer upon them the right to be called 'doctors.' "

The report also said there was a basic weakness in these requirements. Few individuals coming directly from high school are mature enough, especially intellectually, to undertake satisfactorily what should be the equivalent of a medical school course, according to the report. In addition, it said, since none of the sciences taught in high school are a prerequisite for admission, the teaching of such sciences as biology and chemistry must begin on the lowest level.

"The failure of chiropractic schools to comply with their own professed requirements for admission merely compounds the inadequacy of such requirements," the report concluded.

"It is not surprising, therefore, that no chiropractic school is accredited by any of the recognized regional accrediting bodies in the United States. The only accreditation mentioned in chiropractic literature is their own."

In an accompanying Journal editorial, a rather prominent chiropractic spokesman was quoted as saying as recently as last July that chiropractic schools are under serious handicaps because they try to teach students who have not gone beyond high school and who, in high school, were not in the upper half of their calsses, and that for many such persons a professional college course would be too difficult to master. The spokesman further observed that this results in the downgrading of instruction in order to enable such students to pass the courses.

"It appears that chiropractic schools have ignored the principle of selectivity in their admissions policies," the editorial continued. "Their need for students evidently causes most schools of chiropractic to accept persons who would be unacceptable to most undergraduate colleges."

High school students and their guidance counselors should be advised of the "inadequacy of chiropractic education and to the fact that a career in chiropractic is a career in cultism," the editorial said.

Discarded Hypodermic Syringes Are Used By Addicts, Children

The Journal of the American Medical Association warned that disposable hypodermic syringes, which are not destroyed, are being used by drug addicts, and also by childern as toy water pistols.

"While the street-corner addict has no absolute need for these devices . . . there seems no sense in making the habit that much easier or inviting children into harmful play," according to an editorial in the current Journal.

Public safety demands that responsible persons in hospitals, nursing homes, and medical offices completely destroy these disposables as soon after use as possible. Their after-lives may carry too high a price for the sake of convenience."

The disposable syringe, designed for one use only, was introduced in recent years as a convenience to the medical profession, hospitals, and nursing homes.

These disposables must now be added to the "alarming number and variety of materials" that find their way into trash cans, or are kept only half safe behind locked doors, the editorial said.

Reports from Illinois and New Jersey to the U.S. Bureau of Narcotics have confirmed the suspicion that disposable syringes are being used by addicts.

In a letter to the Journal, published in the same issue, Joseph J. Healy, superintendent, Division of Narcotic Control, Illinois Department of Public Safety, said the final disposition of the used syringes and needles is causing concern since state inspectors have been called to investigate the possession of discarded syringes and needles by children who find them in garbage cans or sometimes in city dumps and who use them as "squirt guns."

In one case, he said, two young boys were caught attempting to inject air into the vein of a cat.

Another investigation in downstate Illinois turned up a syringe containing a small amount of a narcotic drug in a bag of discarded disposable syringes, he added.

"The narcotic drug laws of Illinois have very stringent regulations pertaining to the possession, delivery, sale, or exchange of hypodermic syringes, hypodermic needles, and similar instruments," Healy added.

"Illegal possession carries a heavy fine. Since there are so many potential hazards to children, the Division of Narcotic Control requests that all discarded hypodermic syringes, needles, or similar instruments, be totally destroyed by incineration or other means."

Intestinal Changes Found In Acute Viral Hepatitis

A biopsy study has revealed varying degrees of change in the small intestine during the acute phase of viral hepatitis.

The study provides additional proof of an intestinal phase of hepatitis and indicates that the intestinal damage most likely accounts for many of the symptoms of the early phase of this disease, according to a report in the current Journal of the American Medical Association.

Authors of the report were Drs. Thomas W. Sheehy and Malcolm S. Artenstein, Walter Reed Army Institute of Research, Washington, D.C., and Robert W. Green, department of medicine, Walston Army Hospital, Fort Dix, N.J.

Biopsies were performed on six patients with hepatitis and six patients with infectious mononucleosis associated with jaundice.

The intestinal changes, found in all hepatitis patients, amounted to partial wasting away of the villi, the microscopic finger-like projections which carpet the interior of the small intestine. The cells which cover the villi permit the absorption of water and the final products of digestion into the vessels that carry away the blood and lymph.

In contrast, the small intestine was normal in all the patients with mononucleosis except for the presence of atypical lymphocytes, white blood cells arising from the lymph glands.

The findings led the physicians to conclude that infectious mononucleosis is basically an infiltrative disease in which atypical or increased numbers of lymphocytes invade and damage organs, whereas acute viral hepatitis is a disease in which the causal agent invades and destroys the component cells of organs such as the liver, intestine, and kidney.

Similar studies in patients with German measles, chicken pox and mumps revealed little change in the intestine.

Pesticide Poisonings Caused By Unusual Circumstances

An infrequent combination of factors was blamed today for two poisoning episodes in Washington state caused by drifting insecticide from crop-dusting planes.

A report in the current Journal of the American Medical Association on the 1963 outbreaks was termed "the first scientifically acceptable evidence that the drift of the newer organic phosphorus insecticides has produced poisoning clearly recognizable" in residents or bystanders. This type of poisoning has been seen frequently in occupationally exposed persons.

The outbreaks near Toppenish and Wenatchee followed the dusting of crops with tetraethyl pyrophosphate (TEP), formulated and applied in accordance with practices current for at least 16 years, according to Drs. Griffith E. Quinby, Wenatchee, and Glenn M. Doornink, Wapato, Wash.

The poisoning of 15 persons near Toppenish and two near Wenatchee was brief, mild and limited to the lungs. However 15 cattle suffered a generalized illness in the Toppenish incident and two died, while one heifer was afflicted at Wenatchee.

It appears that an infrequent combination of several factors was required to trap dust-laden air in pockets for periods long enough to cause persons in the area to breathe enough TEPP to make them short of breath, the predominant symptom, the physicians said.

These factors were: thermal inversion (in which upper air is warmer than lower air) and consequent static air conditions for longer than an hour over a considerable area; topography of land causing interference with even slow movement of dust-laden air; and tall-growing crops with dense foliage constituting walls of vegetation located on such terrain.

All these factors were present in the Toppenish and Wenatchee outbreaks and also at the time of two veterinarian-confirmed cattle outbreaks in Yakima Valley, the authors pointed out.

Available facts do not explain why cattle developed a generalized poisoning while human beings and some animals—cats, geese, chickens—did not, they added. However, they said, the buffering action of the blood in combining with absorbed TEPP may differ between cattle and man.

"At present, increased alertness on the part of industry, agricultural agencies, departments of public health, and the medical profession may be all that is required to prevent frequent or more serious recurrence of such episodes," the physicians concluded. "Whenever clouds of TEPP dust tend to concentrate or remain static longer than usual, people should be urged to remove themselves and their cattle until the cloud has disappeared."

Urge Sales Limit On Morning Glory Seeds

A plea was made recently for controlling the sale of morning glory seeds which when consumed can produce a psychic reaction similar to LSD.

LSD, the abbreviation for d-lysergic acid diethylamide, is a potent drug capable of causing hallucinations.

The ingestion of morning glory seeds has increased in the past months and at least one suicide has resulted, Dr. Albert L. Ingram Jr., Ritenour Health Center, Pennsylvania State University, University Park, Pa., wrote in the current Journal of the American Medical Association.

"The increased use of the seeds has perhaps been more notable on the college and university campus where a greater degree of self-experimentation is usually found in the adolescent and young adult," Dr. Ingram said.

"This poses a potential danger of some magnitude. As with LSD, latest psychoses can be activated and the neurotic can become physically addicted."

Dr. Ingram urged that "controls be contrived that woud prohibit or limit the sale of the morning glory seed until more scientific evidence is available."

Ironically, he added, "it was the recent questionable use of LSD experimentally which led to tightening of conrtols which in turn probably encouraged the use of the readily available morning glory as a substitute."

For centuries men have sought new experiences by deliberate ingestion of substances having mind-altering properties, Dr. Ingram pointed out. The early discovery of herbs or plants with the ability to alter perceptions or states of consciousness was entirely accidental and the search for such substances was purely on a trial and error basis. It was soon learned that vegetable alkaloids contained in such plants were responsible for the psychic phenomena.

The first isolation of mind-altering substances from the seed of the tropical morning glory apparently was made in 1960, according to the Journal report.

The mental and physical effects of the morning glory seed also seem to reside in the alkaloids it contains. The LSD-like reaction is most likely due to LSD-like alkaloids. Lysergic acids have been found in the seed but no pure LSD has yet been isolated.

Rate Of Aging In Women May Be Decreasing

It appears that nature, without artificial assistance, has contrived to bless womanhood with a longer period of "endocrinologic youth," according to an editorial in the current Journal of the American Medical Association.

The editorial referred to a recent report that, in the decade before 1961, the median age of menopause of women in Great Britain was 50.1 years.

This represents an increase of about four years in the age of menopause compared with that of a century ago, the editorial said, and this trend has occurred in most European countries since the last century.

"Analysis of early literature suggests that approximately 40 years was the mean age of menopause in ancient times, and approximately 45 years between 1500 and 1800," the editorial continued.

"These findings are particularly significant in view of the fact that today adolescence occurs at a much earlier age than in the last century.

"This combination of an earlier age of menarche . . . and a later age of menopause provides material for cheerful speculation. It is possible that these changes connote a decreased rate of 'physiological degeneration,' that is, a decreased rate of aging in women in recent decades."

There is no certain explanation for these changes, although better nutrition and improved environmental conditions may play important roles, the editorial added.

Hospital Construction Plan Approved By Health Council

The 1964-1965 plan for the construction of hospitals and other medical facilities has been approved by the state public health council, according to Franklin M. Foote, M.D., State Commissioner of Health. The council approved the plan on the recommendation of the State Advisory Planning Council for Hospital Construction.

The new plan is available for inspection and comment of all interested parties at the offices of the State Department of Health, 79 Elm Street, Room 201, Hartford.

The plan indicates the manner in which the state health department will recommend allocation of $1,500,000 in federal grants for the construction and improvement of Connecticut's hospitals and medical facilities for the 1964-65 fiscal year.

Under the Hospital and Medical Facilities Survey and Construction Act—formerly called Hill-Burton Program and amended in 1964 by the Hill-Harris Act—money is allocated to sponsors of eligible projects of a non-profit nature which offer a community service without restriction to color, creed or economic status.

This year's plan, according to Dr. Foote, gives high priority to possible construction of public health centers. It also divides the state into 11 hospital service areas, with five priority groups ranging from A to E. Allocations of funds will be made on basis of beds needed.

Connecticut Medicine

Connecticut State Medical Journal

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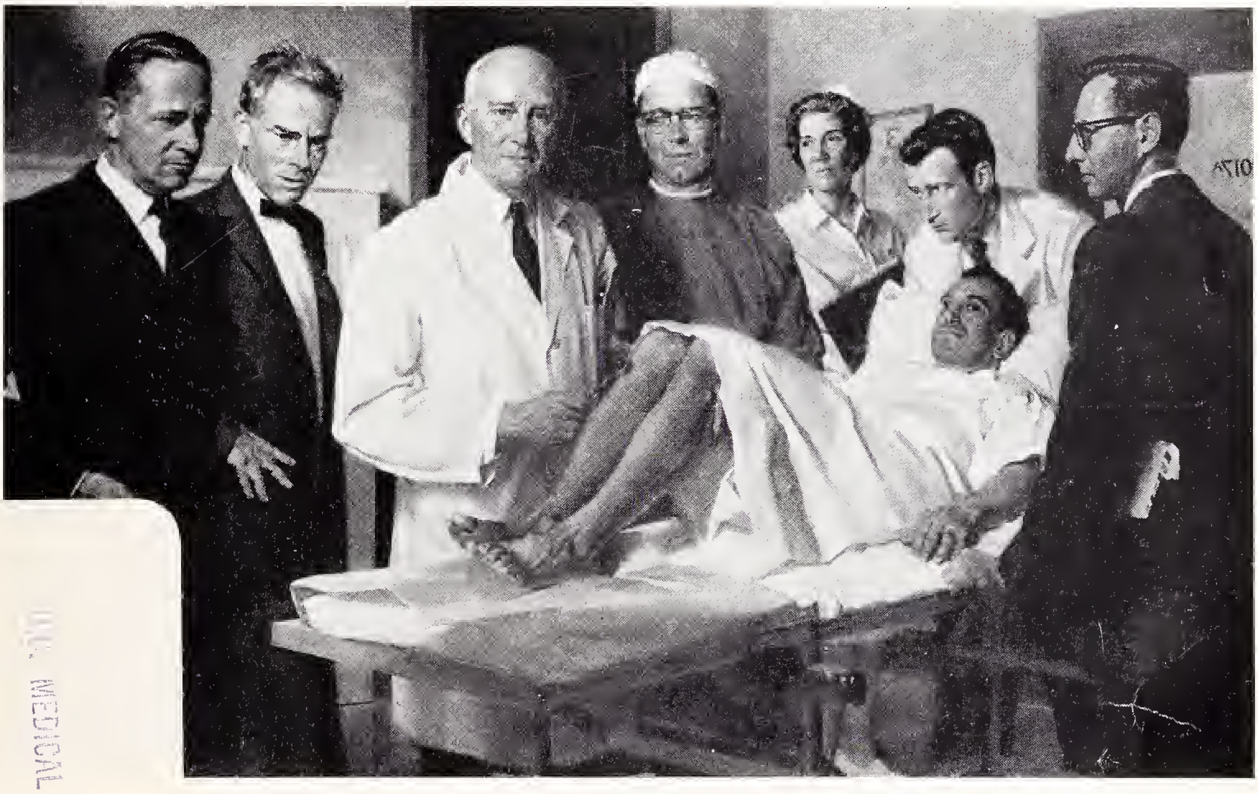
SPECIAL ISSUE HONORING DR. WILLIAM GERMAN, Stevenson Flanigan, M.D., *Guest Editor*



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*Lennox, W. G.: Epilepsy and Related Disorders, Boston, Little, Brown and Company, 1960, vol. 2, p. 865. 432R65

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Connecticut Medicine

editorials

Foreword

The collection of papers in this issue of Connecticut Medicine, contributed by former residents and colleagues of Dr. German, is not only a personal tribute to him but a vivid testimony to the effectiveness of his teaching and a career that extends over a period of three decades.

Dr. German is the professional "great-grandson" of a pioneer American surgical educator, William S. Halsted, having been trained in both general surgery and neurologic surgery by Dr. Samuel C. Harvey, who was chairman of Yale's department of surgery from 1924 to 1947. Dr. Harvey in turn spent his assistant residency at the Peter Bent Brigham Hospital in Boston under the tutelage of Harvey Cushing, and Cushing was a resident surgeon trained by the great Halsted at Johns Hopkins Hospital in the formative years of that internationally famous institution.

In the present day, when there is an increasing tendency for aspiring young surgical specialists to cut as short as possible their basic training and experience in general surgery before embarking upon the specialty and when many specialty boards have set minimum requirements that do not encompass a broad general surgical training, it is pertinent to emphasize that Dr. German is a very well trained general surgeon, although he has chosen to limit his practice and teaching largely to the diseases of the nervous system, as did Harvey Cushing.

Dr. German's widely recognized professional attainments and the neurosurgical service at Yale which he built into one of the finest in this country are a constant source of pride and gratification to his colleagues including the present chairman of the surgical department who gratefully acknowledges himself an early beneficiary of Dr. German's supervision and wise counsel.

Gustaf E. Lindskog, M.D.

Doctor German In Connecticut Medicine

For many years now it has been a custom that those in residency training in neurosurgery at New Haven and Hartford meet in the Spring for a dinner with Doctor German and the others that participated in resident training. This has always been a memorable occasion, especially for the (usually two) senior and departing residents. For the Spring meeting of 1963 the tables were turned, and Doctor German was invited as the guest of honor to a gathering which included more than fifty then current and past co-workers and

THE COVER

DOCTOR GERMAN'S CLINIC

ON THE FRONT cover of this issue is a copy of the painting entitled, "Doctor German's Clinic" which hangs in the Farnam Auditorium at the Yale-New Haven Medical Center. The canvas is quite large, measuring more than five by seven feet. The headnurse, Miss Elsie McIntyre, R.N., is there to typify constant nursing support. The patient is one, in for a regular follow-up visit, twenty-five years after Doctor German removed completely a tumor of the pineal gland from the depth of the brain. This is one of the "many pleasant return visits which are such a reward to the operator."

At the head of the table is a medical student, Doctor German's son, John. Doctor Benjamin Whitcomb of Hartford is on Doctor German's right; Doctor Lycurgus Davey, to the extreme left as you look at the group. Doctor Saul Frankel is the figure at the extreme right of the portrait, and on Doctor German's left is Doctor Stevenson Flanigan, Associate Professor of Neurosurgery at Yale.

Deane Keller designed this portrait group to convey graphically the vital spirit of Doctor German as a surgeon and teacher of Neurosurgery and the admiration and respect of those who owe to him a professional philosophy as well as technical skill.

residents. There were representatives who bracketed a span of thirty years of endeavor. There were absentee ballots of appreciation and admiration that spotted the in-between years not represented.

The occasion afforded an opportunity to present, to the University, the portrait, "Doctor German's Clinic" composed by Professor Deane Keller of Yale. The work now resides in the Farnum Auditorium at the Yale-New Haven Medical Center, and serves a continuing acknowledgment of the sincerity with which his residents look to the man. It is as much a revelation to talk of the portrait with the artist.

The afternoon for that Spring meeting was devoted to the presentation of remarks. They ranged from scientific manuscripts through random comments offered by Professor F. S. C. Northrop as a patient treated by "the Professor." There were more following the dinner, and except for the few technical fallacies of tape recording much of the day had been preserved for his leisure perusal.

Connecticut Medicine has warmed to the recognition of Doctor German—the art and the science with which he has practiced here through these years. This number is another limited compilation of the efforts of a few of the many who would record their best wishes to a friend. Some of the manuscripts were taken from that earlier meeting.

Stevenson Flanigan, m.d.,
Guest Editor

Surgical Treatment Of Coronary Arterial Occlusive Disease

There has been a mountain of investigative human thought and endeavor towards the surgical cure of coronary artery insufficiency. It was "too much" for what came out of it because it was done "too soon" before visualization of the coronary arteries was possible and before vascular correction could be performed upon a quiescent heart during cardiac by-pass procedures. Actually the era of surgical treatment for coronary arterial occlusive disease has barely begun and "what has gone before should be looked upon as developmental prologue."[1]

We are coming to realize that there is a real place for surgical treatment of coronary arterial disease but it must be performed upon the properly selected subject and the first step in such selection means that the patient must have the benefit of coronary arteriography. Sones's technique of selective coronary arteriography permits an excellent visualization of both coronary arteries and of major subepicardial radicals.[2] It consists of high speed cinephotography and a multiple injection technique to opacify the coronary arteries. The pattern of each individual patient is documented on 35 mm. film. This technique has now been performed upon 1,800 patients. With it one gains illumination of the coronary circuit of an individual patient and thus is in possession of information for selection of patients for surgical treatment. But what is more, it offers a practical method for assessing in the living patient the effectiveness of whatever therapy is employed. It is this angiographic technique more than anything else which has created a need for a new look at procedures which are designed to revascularize the ischemic myocardium.

It is interesting that before 1959 few operations were performed to relieve myocardial ischemia anywhere and none at the Cleveland Clinic Hospital. However under the constant stimulus of Sones' method of coronary arteriography three kinds of operations have since been performed, seventy Vineberg internal mammary artery implants, five coronary artery reconstructions and sixteen excisions of ventricular aneurysms. In each instance their experience has taught us much not merely about the surgical problems involved in success of these operations, but also new concepts about the anatomy and physiology of the myocardium.

We have learned that the concept of Vineberg's internal mammary implant rests upon a unique property of the myocardium which has not been generally understood.[3,4,5] The major heart vessels are on the surface beneath the epicardium while the nutrient vessels dip almost perpendicularly into the underlying muscle and these latter are rarely affected by the atherosclerotic process. In addition to the arteriolar pathways within the myocardium, there is a vast network of endothelial lined spaces, the sinusoids. Originally described by Wearn,[6] these endothelial lined interstices within the muscle bundles permits an incredible run-off of physiologic fluid. When the internal mammary artery is tunnelized into the anterior left ventricle, if there is coronary artery insufficiency, then collateral channels develop. At first there is an initial run-off of the blood through the sinusoids and significally no hematoma developes from the implanted bleeding artery. Gradually arterial proliferation takes place which provides circulation to the ventricular vascular bed.

Effler now employes Vineberg's operations in patients in whom there is incapacitating angina, in whom there is demonstrable involvement of the anterior descending branch of the left coronary artery and absence of major myocardial infarction of the anterior left ventricle. Of the seventy operations performed since 1962, three died of acute myocardial infarction and associated ventricular

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arrhythmias, on the first postoperative day. The remaining sixty-seven are alive and appear to have been improved even though it is still in the stage of "initial" impressions. Two of the sixty-seven patients developed thrombosis of the initial implants and experienced no relief from the operation. The remainder, however, each demonstrate a patent implant of various degrees of arterial runoff. In some there is a clear cut pattern of new arteries that enter the ventricular circulation opacifying normal myocardial venous channels and the coronary series itself. Those patients who have demonstrated patent implants without exception claimed significant or total relief of their preoperative subjective symptoms.

The logical approach of course to the control of occlusive arterial disease is removal of the obstruction and reconstruction of an adequate arterial pathway. The early attempts at applying endarterectomy for coronary occlusion were undertaken with inadequate preparation and under unsatisfactory conditions. Satisfactory visualization of the lesion was either poor or absent. Furthermore, the operations were performed without benefit of extracorporeal circulation and elective cardial arrest. It took time to recognize that because the coronary artery is an extremely small vessel, only an incision and routine application of a patch graft would afford patency. Once these workable procedures and technical facility became clear, the real problem was to find the patients in whom such an operation would succeed. It turned out that out of 1,800 patients studied by cinecoronary angiography, only a relatively small number of patients were shown to have isolated segmental occlusion of a major vessel. The overwhelming percentage of patients with organic coronary artery disease seem to suffer from diffuse involvement that renders them unacceptable for endarterectomy.

Effler[1] operated upon four such patients each showing a 90 per cent occlusion of a main coronary artery close to the point of its origin. In each instance the patient suffered almost intractable angina pectoris and was threatened with sudden death. An isolated lesion of this type suggests that the patient is an appropriate subject for endarterectomy. What is needed is extracorporeal circulation, regional hypothermia—cooling the heart to 20°C—then arteriotomy and reconstruction with an outflow patch utilizing a segment of vein or a piece of pericardium itself. With the aid of "gold plating"[7] instead of sutures, the reconstruction should be greatly facilitated and one of the complications —distal dissection which caused death in two early patients, may be avoided. Three patients with patch graft reconstructions of a main coronary artery enjoyed complete rehabilitation and coronary angiography six months after operation demonstrated total relief of the obstruction. It is, however, a serious undertaking, and in most patients, failure to achieve the desired result will cost the patient his life.

One of the most dramatic complications of severe occlusive coronary artery disease is aneurysm of the left ventricle. Today the surgical treatment of ventricular aneurysm is gratifying and technically is more easily accomplished than is Vineberg's internal mammary artery implant as well as successful coronary endarterectomy. The success is made possible not merely by great advances in open heart surgery, but by the anatomy and function of the anterior wall of the left ventricle. It seems to contribute only to the pumping efficiency of the left ventricle. It offers no support to either the mitral or aortic valve, and it does not contain either the inferior or superior branch of the left conduction bundle. These two factors explain why an aneurysm in this location is compatible with life. Effler reports the technical procedures he followed in sixteen patients, all of whom survived and were discharged from the hospital. Later one died of recurrent infarction and one with a staphylococus infection. The other fourteen were rehabilitated. It is obvious this operation offers excellent palliation and prolongation of life to a patient with severe heart disease due to aneurysm.

It is clear that the three operations listed above are in reality not the limitation of surgical treatment of coronary artery disease, but rather the opening wedges in a movement that will reestablish the repute of surgery in this field.

L.H.N.

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A Student For Life

The average physician practices thirty-five to forty years or more. During this period available medical knowledge will be growing at the rate of nine per cent per year or more. Obviously what was learned during medical school will gradually become less useful and will require continual replenishment. The need to replace old knowledge by the new is extremely troublesome. It involves an educational process more difficult for the practicing physician the longer he is out from school. It is therefore not surprising that medical educators should be forced to take a hard look at the educational techniques that can best serve the physician during his many years in practice. Being a life-long process, education during this period is now termed Continuing Education and the physician must realize that he must now be a student for life.

Being a student for life obviously invokes concepts and techniques of self-education, since we cannot be in school forever. How do we go about engaging in continuing education. Jehgers[1] points out that it will require high motivation, and well-established habit patterns which must be developed during the entire formal and early period of medical education, that is, during student days and internship and residency. If the habits of self-education are not established well during this period, it becomes progressively more difficult to form them during active practice.

The secret of continuing education is, of course, to learn how to educate oneself. Required is a high degree of initiative and motivation. From the new science of learning we know that one remembers best what is learned by personal effort (involvement).[2] When we read medical literature it should primarily be with a purpose and to gain an answer to a question. There should be a specific goal in mind, discussion and solution of some medical problem. The best education of course is care of patients, with critical attention to the details of relevant medical information. Since we are all creatures of habit, physicians should develop the optimal reading habit early in his formative period and develop it fully. Reading requires libraries but the brain must be trained to find and utilize those facts which are difficult to remember unless periodically checked. Clearly easy accessibility to libraries and learning to use them to the fullest is essential.

Jehgers has evaluated the role of self-education during medical school training. He minimized passive and didactic presentation to students and house officers while he increased a more active participation in their own education. For example, a student when shown a roentgenogram can read the written report and then examine the film. He will not learn as much as the student who first makes his own independent analysis which he then compares with the official interpretation. If they do not agree, he then requests a member of the radiology department to explain how this answer was arrived at or better still, read about it and then makes his own inquiry. The second approach has the greater element of self-education value and with repetition, becomes a habit pattern likely to contribute significantly in one's ability to interpret films of the chest. This approach lends itself to an almost endless series of uses. This is a true practice in self-education which requires independent thinking and independent reading. It invokes motivation and complete personal participation.

Independent reading requires some experience in the use of a library and the gradual building up of a personal library. The most effective method in learning to use a library turned out to be a library clerkship. Jehgers set aside a brief full time period during the third year. During this period he learned how to start a personal library, he received specific instruction in the use of hospital and school libraries. Library "rounds" were spent with internes and residents who have already begun a personal library and a discussion was carried on of how the "library habit" can be utilized and developed during these formative years. During the library clerkship the student learned how to prepare a bibliography on some obscure subject to gain experience in the use of major library indexes. He also gave oral reports on this topic to his instructor and presented the references he assembled in writing together with an evaluation of them.

The residents and the instructors stimulated the student in the use of institutional libraries as an aid in the work-up and the study of patients assigned to them. The student also occasionally spent an evening visit to the home of a respected practitioner who has and effectively uses a good personal library. By observation of house officers and teachers who personally utilize libraries, he improves his ability to read articles, evaluate the validity of statistics of the data presented so that he can discuss what constitutes a good research project. It turned out that only as the third year progresses did the role of the library fall into the proper perspective. The first and second year students were too overwhelmed to comprehend the full potential of the use of the medical library. It was a rare student who did not profit by this experience for he was not equipped to solve the patients' problems and to learn which problems are still unsolved. Without such formal instruction, the average clerk made less use of the library and experienced less

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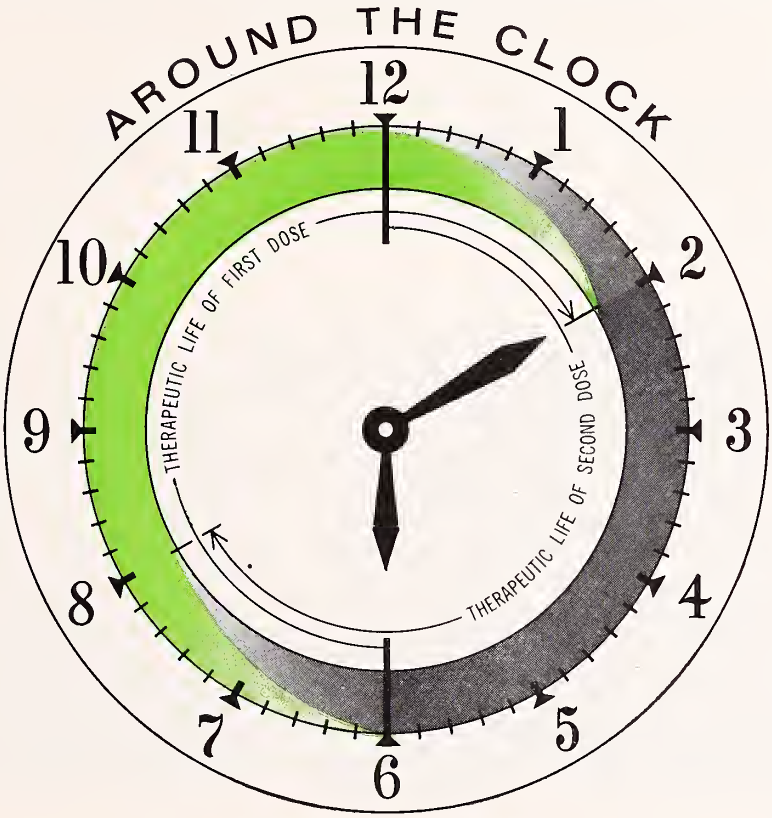
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encouragement from staff members at all levels of experience.

Jehgers main theme is the concept of students, house officers, and later as practicing physicians, being rewarded by building a personal medical library. He emphasizes the importance of its maintenance during the years of practice and the role of this experience as a major and highly effective technique of continual self-education throughout their professional careers. There is no doubt of the rewarding nature of such an effort. It requires no formal compulsion in self-discipline. It intereferes with none of the prerogatives of other departments and it is not oriented to any one specialty, since it is generally helpful for all subjects studied.

A personal library consists of four types of material: general textbooks, monographs, medical journals and miscellany. Of these, the fourth type is probably the most valuable. It includes notes on articles read about the patients studied, personally collected data, abstracts or articles read and pamphlets, mimeographed material or other data from teaching sessions. This type of personally collected material cannot be supplied by any formal institutional library, nor can it ever be supplied by a computer. Of course, the actual material make-up of the library is less important than the desirable habit pattern that is formed in its acquisition and use. Each physician beginning to assemble such material will probably devise his own method of filing them, so that they are easily available. Jehgers urges the purchase of a two drawer letter size file to keep on the desk with two hundred manila folders with staggered tabs, a scissors to cut up articles and pages, pliers to remove staples from journals and a stapler, a supply of plain white cards and white paper for notes. The essential feature is a habit regularly practiced of writing notes on loose leaf paper or on cards, data and other facts one wishes to remember. In each folder there is the doctor's personal experience factually recorded. A brief glance then refreshes the memory and permits one to carry on with the solution of a clinical problem.

Numerous modifications of the index titles are made to meet a variety of needs ranging from general practice and the various other specialties to those of a full-time academic career. Those who have kept up this educational concept over the years comment "this is the single most helpful educational concept they learned in the medical school," and that it does much to help them keep abreast. All agree that building a personal library and continuing it constitutes a most effective technique of self-education. To the physician in practice, a personal collection of this type supplemented by textbooks and monographs becomes a priceless asset.

To read regularly with a directed purpose, to solve problems is the hallmark of the progressive physician. In the final analysis each physician must assume the prime responsibility for continuing his education during his professional career. With the library habit, his participation in periodic formal programs will be more meaningful and effective. Periodic formal lectures are however a passive activity. Learning involves more. It involves motivation, personal participation, and it involves taking into account differences in the speed of learning. All of these are served best by developing the library habit. Then we can all become a student for life.

L.H.N.

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The Fundamental Properties Of Viruses

In his annual discourse[1] Enders, a Nobel Laureate, has given us a clear insight into what is known about viruses and some speculations about how such knowledge may contribute to a more effective control not only of recognized viral diseases but possibly other conditions in which the etiology now remains doubtful or entirely unknown. What we know about the fundamental properties of viruses, has on the one hand, helped to clarify the complex phenomena that are responsible for resistance to viral infections. On the other, are the phenomena that result from the interaction of viruses and cells, under those conditions in which cells are not irreparably damaged but continue to survive and multiply. Enders calls this the "temperate relation" between cell and virus, a relation which frequently results in the antigenicity of the cell.

A virus of whatever origin exists in one of two states, that is, in a complete or resting form or in a vegetative state. The vegetative state during which multiplication occurs takes place only within the confines of a living cell. When multiplication ceases, the virus particles in their complete form, emerge from the cell, often into an unfavorable environment of the hosts extra cellular fluids and then the hostile conditions of the external world. Ultimately, the virus particle must somehow meet and enter a susceptible cell, there once more to pass into the vegetative state.

All complete viruses consist of two essential components, a protein pellicle and a core of DNA or RNA. In some species lipid and poly saccharides also are found. The protein that surrounds the nucleic acid protects it from factors in the external environment that might inactivate or destroy it; for example, the DNA ases and RNA ases present in body fluid. It is also possible that the protein envelope may facilitate the penetration of a susceptible cell by the viral particle. However, once inside, the protein covering is removed. As far as the nucleic acid moiety is concerned, it is the viral genetic apparatus, for when brought into contact with a susceptible cell, it will enter it under appropriate conditions and then is capable with the help of the cells enzymatic equipment, of directing the synthesis not only of more of itself but of the viral protein as well. This process of viral synthesis represents the vegetative state of the virus. Hundreds of particles may be formed, the economy of the cell disrupted and with its disintegration, a fresh crop of complete particles are released. Sometimes the viral particles are extruded individually at the cell surface thus permitting the cell to survive for variable lengths of time.

There are however certain types of cells in which, under certain conditions not yet clearly defined, the reproduction of complete virus units may not occur after infection, although replication of the nucleic acid and sometimes even of the protein takes place. Such a cell remains viable and under favorable circumstances may undergo mitotic division.

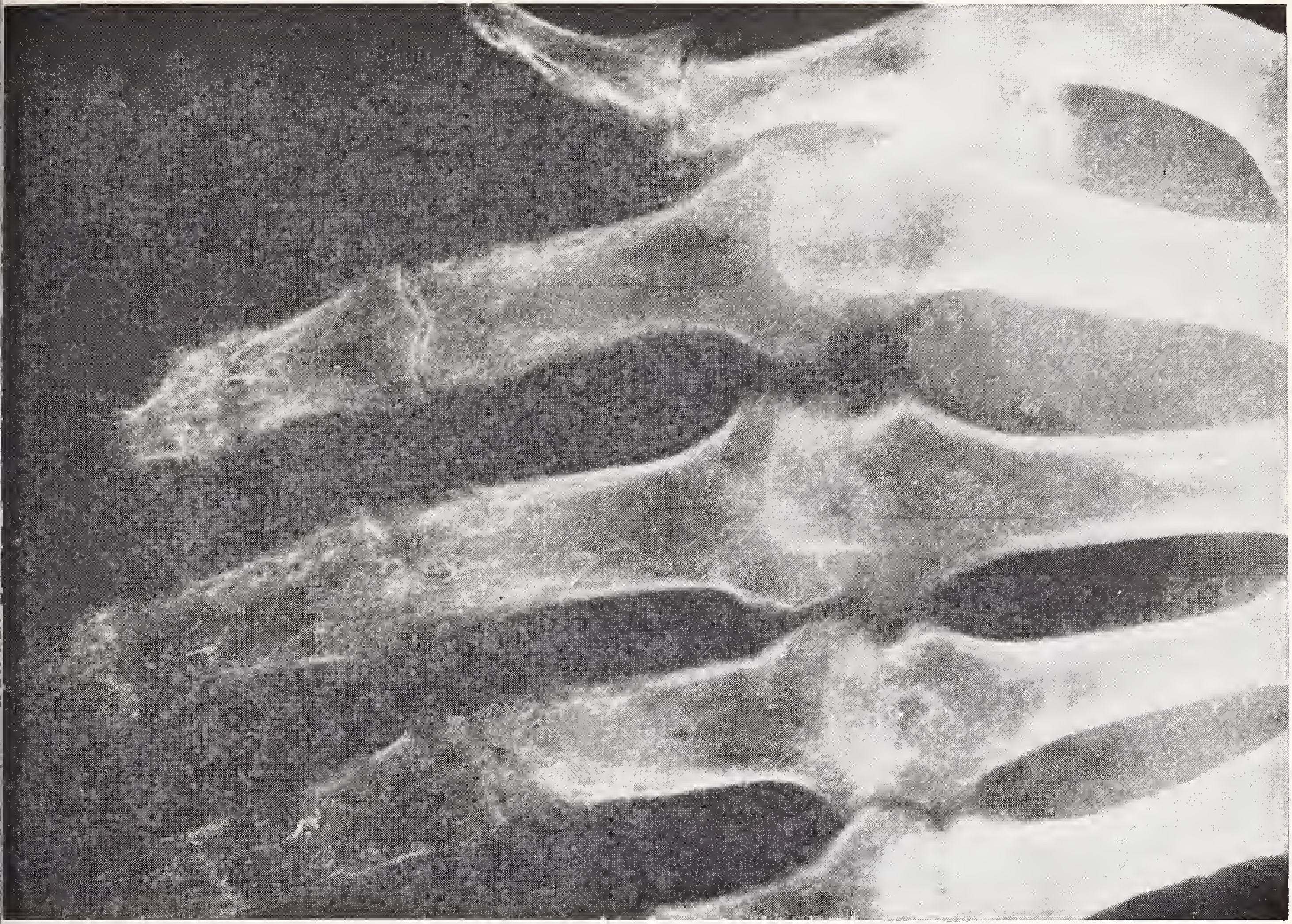
One then finds that the genetic component, termed viral genome, is found in each descendent of the original infected cell. The infection then in some cases may not be followed by cell death as exemplified in infection with Rous sarcoma virus. Here the viral units are completed but their rate of manufacture is so regulated that the number present at any one time is insufficient to interfere with cell growth and cell division. Thus we see that the "temperate" cell-virus relation is found under two situations, incomplete replication of viral subunits, or suppression of the rate of syntheiss of complete virus.

The importance of the "temperate" virus-cell relationship derives also from the fact that in tumors caused by viruses, the malignant transformation of the cells occurs by a temperate relation between the virus and the cell. Most studies of this remarkable relationship have come from cell cultures infected by oncogenic viruses especially SV 40. When this virus was added to cultures of hamster-kidney cells, the investigator had a perfect model for studying viral oncogenesis. In the first four to six weeks, no marked changes in the appearance of the cells were seen. The virus multiplied for a while to a moderate extent, then ceased. For a while the virus could not be detected by ordinary means, but later special techniques revealed it was still in a masked or hidden state. But as the incubation of the cultures were continued, the growth rate of the cells accelerated and new rapidly growing obvious tumor clones appeared. The growth potential of these cells was very high. Several new biologic properties of the tumor cells became apparent.

The cells did not produce virus particles that were detectable by ordinary means. However, when special techniques were applied, virus was intermittently demonstrated and a single cell among several million will suddenly begin to manufacture complete virus. Evidently in the cell population as a whole, the process of viral synthesis is suppressed, but rarely may go on to completion under as yet undefined circumstances.

A most significant finding in this study was the appearance of an antigen not present in normal hamster cells, but developing with viral infection of SV 40. This new antigen first shown by Huebner and his associates to appear in the cells of tumors induced by innoculation of hamsters with SV 40 virus, appears to be a new type produced by the cell itself since it is unrelated to any of the known antigens present in the virus particle. This new cellular antigen produces specific antibodies in tumor bearing animals. The antigen however is virus dependent, since it is found only in cells transformed by SV 40 virus and not in those transformed by the polyoma virus or in the cells of other tumors not associated with virus. Furthermore, whether SV 40 infects human kidney cells or culture cells of mice, rabbits, and pigs, the same antigen is found. There is therefore every reason to believe that the development of a new cellular antigen may be a regular effect of the temperate virus relation whether or not it is associated with neoplastic transformation. The discovery of the new cellular antigen in cells transformed by virus seems to provide a means of determining whether some known viruses oncogenic in lower animals have caused tumors in man.

Aside from cancer, the "termperate" relation between virus and host cell is coming to be recognized as a common event. The persistence of virus in a latent form in herpes simplex infections has long been recognized and now we can visualize a bit more clearly how such infection is maintained. Enders points out that it seems likely that the genome of the virus varicella remains in certain cells in which little or no complete virus is produced and so is able to persist for years. When factors as yet unknown alter the virus-cell equi-



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he initial response is usually maintained ithout dosage increases; indeed, ini- al dosage is often reduced for mainte- ance purposes.

alicylate or steroid therapy can usually e diminished or, in some instances, liminated.

soriatic arthritis responds in the same ay as rheumatoid arthritis but the skin sions are usually not affected either fa- orably or adversely by treatment.

Precautions
Before prescribing, the physician should obtain a complete history and perform a complete physical and laboratory examination, including a blood count.

The patient should be kept under close supervision and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools.

If coumarin-type anticoagulants are given simultaneously, the physician should watch for excessive increase in prothrombin time.

Side effects
The most common side effects are nausea, edema and drug rash. Infrequently, agranulocytosis, generalized allergic reaction, stomatitis, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug.

Contraindications
These include: edema, hypertension, or danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when other potent chemotherapeutic agents are given concurrently because of the increased possibility of toxic reactions; when the patient cannot be seen regularly; when the patient is senile.

Note: The physician should be fully aware of dosage, precautions, side effects and contraindications as contained in the complete prescribing information.

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librium, then complete virus is found causing cellular damage expressed by the clinical manifestation of herpes zoster.

The long lasting immunity conferred by an attack of many viral infections has long been held by some to depend upon the continuous presence of virus in the tissues. This is a hypothesis of course. When we know exactly how to proceed to upset the cell-virus equilibrium and thus allow synthesis of complete virus to proceed, then we shall be able to detect the presence of the viral genome and obtain proof for this hypothesis.

The temperate virus-cell relation can even be thought of as possibly playing a role in certain degenerative diseases such as multiple sclerosis, Parkinson's disease, rheumatoid arthritis. From what is now known, it is not impossible at all that certain infections in certain persons perhaps with common viruses like those of measles or mumps or herpes simplex might be followed by the establishment of the temperate virus-cell relation. As a result, new antigens might appear. The cells bearing them might become immunologically foreign and eventually might be injured and destroyed either by the development of humoral antibodies specific for the new antigen or by a cellular reaction of the homograft rejection type. If this be true, may not a mechanism of this sort lay the foundation for some of the auto-immune diseases. We are on the threshold of great new vistas in biology and medicine illuminated by progress in virology.

L.H.N.

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Problems In The Area Of Antiviral Vaccination

The two types of vaccines now in general use, inactivated vaccines of the Salk type and living activated virus vaccines of the Sabin type consist essentially of virus particles which have been propagated in the tissues of a living animal. Both contain a complex and largely unknown mixture of cellular derivates as well as virus. The possibility cannot be disregarded that in rare instances these cellular products will cause pathologic changes in the recipient in quite unrecognized ways. Following the use of rabies vaccine prepared in nervous tissue they can be of great significance.

We know that DNA of extraneous origin might penetrate cells of the recipient and combine with a segment of the genome and this can lead to suppression or modification of normal cellular metabolism. However, in principle, the presence of all contaminants is undesirable and efforts are already, under way with polio vaccines to reduce such extraneous substances while increasing the concentration of the viral component to enhance antigenic activity.

Probably of greater importance than eliminating all tissue constituents, is the exclusion of viruses that may by chance contaminate the materials used in the production of the virus. One impressive example of such contamination was the discovery in 1960 of a simian virus which turned out to be exceedingly widespread in the kidney tissue of Indian monkeys then used for vaccine production. The agent was not recognized as a contaminant because the techniques then available for the detection of extraneous viruses did not reveal its presence. Another illustration of troublesome contamination was the discovery of widespread occurrence of the agents of the fowllymphomatous group in many duck embryos that are exclusively employed in the preparation of vaccines against measles, yellow fever and influenza. A very recent case of the accidental inclusion in small-pox vaccine of the virus causing Milkers nodule has been described in France by Viewchange and his co-workers. It is clear we need more knowledge of how to separate the virus from the cellular derivatives than we now have in the mass production of virus vaccines.

After years of investigative effort the question is still unanswered whether the resistance induced by inactivated vaccine quantitatively is the same as that evoked by live attenuated vaccine. There is good reason to believe that through the solution of this problem new mechanisms of resistance to viral infections may be brought to light. When this occurs less empirical ways of immunization may be recognized and then we should all be able to agree upon which of the presently available methods is preferable. What do we know now about the essentials of the two kinds of vaccines?

When inactivated virus is introduced into the body, it of course cannot multiply in the host cells and its antigenic effect is determined solely by the amount of viral protein present in the innoculum. Accordingly, resistance to subsequent infection is directly related to the concentration of antibody induced and to its persistance in the body fluids. The initial concentration of antibody attained tends to decline and eventually reaches an ineffective level, which however can be restored to the original or even higher level by repeated administration of antigen after an appropriate interval or by natural exposure to the specific virus.

Attenuated virus vaccine is usually not sufficient to stimulate antibody production, but this deficiency is soon repaired by the extensive multiplication of the virus and effective antibody levels are ordinarily held for much longer periods than occurs with the use of inactivated vaccine. With attenuated vaccine a single dose may confer immunity of indefinite duration. These advantages are considered by some to be balanced by the greater reaction to certain live virus vaccines. Also on theoretical grounds, the cell proliferative effects (carcinogenic) of certain virus[1] can be regarded in principle as representing a further disadvantage of attenuated vaccines. So that the problem is more complicated than the question of just stimulating circulating antibodies.

Actual infection whether by attenuated or fully virulent virus evokes defensive mechanisms that appear to be quite independent of circulating antibodies. In the first place a state of resistance may be established and persist in the absence of antibodies. In the second place there is data indicating that infection may occur or persist in the presence of antibodies. An example of the first is that agammaglobulinemic or hypogammaglobulinemic children usually recover from measles and other viral infections in a normal manner although their capacity to produce antibodies is extremely limited. This phenomenon is also seen in animals pretreated with rays or chemicals to suppress antibody formation. Their recovery from vaccinia and influenza virus infection proceeds normally.

Some of the factors that appear to contribute to the establishment of resistance in the absence of antibody are increased temperature, increased local acidity, decreased oxygen tension. The stimulation of Interferon,[2] a non-specific protein that retards viral synthesis in a virus infected cell, is also considered by many workers to play an important part in this complex of antiviral forces. The question still remains whether these factors even in combination can account for the highly efficient suppression of virus and complete histologic and clinical recovery that is observed. Are there other mechanisms involved? Enders[1] thinks there may be allergic manifestations in which certain cells rendered hypersensitive by the virus develop a capacity to inhibit or destroy it. There may also be some modification of normal metabolic cellular processes induced by contact with the virus which leads to at lease a temporary resistance to unrestricted viral multiplication.

A striking illustration of the failure of antibody to block viral multiplication is found in children who received inactivated measle virus and then were treated with attenuated vaccine. The attenuated virus multiplied in the tissues and greatly increased the antibody titre. This same phenomenon was also observed in monkeys both in vaccination against measles but also against poliomyelitis. Some of the monkeys first treated with inactivated virus then came down with paralytic polio after receiving attenuated virus. A similar observation was reported by Sabin, namely the consistent failure of inactivated polio vaccine to prevent subsequent intestinal infection by the attenuated virus. In the latter case the cells of the intestinal tract of human subjects became totally refractory after administration of attenuated vaccine.

It is a valid conclusion that mechanisms other than those dependent upon circulating antibodies are evoked by infection and that they tend to persist indefinitely. The evidence about the major defensive role of specific antibody present before infection is conclusive, but other factors may account for the greater efficiency of the protection conferred by infection as compared with inactivated virus. It remains for further investigations to define them precisely. Perhaps then, ways may be found to bring them into play without the necessity of subjecting the patient to infection with the complete virus particle. Then we will come into possession of means to better control virus infections and hopefully perhaps even in their treatment.

L.H.N.

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Rapport: 5. Common Errors In The Formation Of Rapport

To cure Sometimes, to relieve Often, to comfort Always—Epitaph to Dr. Edward L. Trudeau.

Rapport is a natural warm trusting relationship. Whatever we think we let people know in part what sort of person we are by the things he sees about us in the consulting room. Whether we like it or not the consulting room to the patient is a reflection of the doctor's personality. In one sense the furinshings of our room is a spontaneous expression of our personality, in another, of course, it obviously results from a conscious effort to present ourselves as we would like others to see us. A purely utilitarian consulting room does not do this. Neither does a room furnished in a pseudosophisticated style. The patient recognizes it as a veneer and suspects that the physician who works there probably is presenting a facade.[1]

What the patient wants to know is whether we are professionally competent. This idea can be communicated by the cleanliness, the orderliness and

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the general air of efficiency of our office. Equally important, if the patient is going to form a rapport with us, he wants to know whether we are sincere and friendly. This can be assisted by making the office comfortable, homelike as well as efficient. Spectacular displays of instruments can only make the average patient apprehensive, even if it will impress a medical student. A dirty pipe or cigarette buts can easily offend a non-smoker. Even arrangement of the furniture has meaning. Interviewing a patient from the other side of a large desk, while impressive in the office of a big executive, won't work with a doctor. It is a cold impersonal arrangement suggesting a superior and inferior. We should seat the patient on the same side of the desk where we sit eliminating any barrier between us.

We communicate what we are and what we would like to be by our clothes, because the patient forms some opinion of us as soon as he sets eyes on us. Our clothing gives the patient important clues as to how he should behave towards us. Formal dress means formal relationship, informal dress invites a freer relationship. A white coat is a symbol of the professional standards in our group. If we dress differently the patient may be made uncomfortable because then we appear to him different than what he expected of us. Nevertheless in spite of the formality of this symbol we must recognize that we might make a frank open and trusting aspect of rapport difficult.

There is at times misuse of the patient's vernacular, especially can this be so when we see patients of social classes different from our own. They use different idioms of speech than we do. We must not naively attempt to show friendliness by using the vernacular speech of the patient in talking with him. The physician is likely to use it incorrectly and so appear ridiculous to the patient. Even if he uses the idiom well, it can just seem incongruous and confusing.

Then there is the misuse of the Christian name. Of course to form a rapport we want to be friendly. Some physicians therefore are tempted to call patients by their first name in an attempt to show their friendliness. We must remember, however, that there are cultural and family conventions about the use of the Christian name. Think of the great differences in this respect between American and English usage. An anxious patient can be made even more ill at ease by the inappropriate use of his Christian name. To avoid error it is probably best to address a patient at the beginning by his family name.

Another error is the inept use of touch. We have already seen previously the significance of touch as a means of non-verbal communication. To take the patient's hand at the wrong time, to touch the patient the wrong way, can suddenly bring forth such resentment and hostility that rapport is immediately endangered.

Talking down to the patient is another pitfall to be avoided. There is a vast difference between simplicity of expression and talking down to the patient. The whole of our dealing with the patient is based on fundamental simplicity, the simplicity of explaining psychological processes, the simplicity of explaining bodily functions and their aberrations. If we stoop down and talk down habitually, we may be sure that it will be obvious to the patient and resented.

Another pitfall in establishing rapport is inappropriate inquiry, inappropriate to the patient, that is. For instance if the patient is pressing to tell us of his urgent symptoms at this point it is quite inappropriate to ask him about his past medical history and his family history. In fact it may arouse resentment in some patients to whom such questions seem irrelevant. We may wish to elicit extremely pertinent information from the medical and psychodynamic point of view, but before we question a patient in such an area we first must be sure that he will not resent what appears to him "foolish" questions. It would therefore seem wise to leave this area of inquiry until well on in the interview when rapport has been firmly established. A further example is the patient's sex life which often appears to the patient at first as an inappropriate subject and lead to resentment. Suppose for instance the case of a woman with a neurosis of hysterical paralysis of an arm following some minor physical injury. The patient cannot see any likely connection between the two and become resentful. She might think, "this doctor is sex mad!"

We must remember that just as postponing an inappropriate question helps in bringing on rapport, the patient might be offended if we fail to ask an appropriate question. Many patients are shy about their problems. They want to discuss them but are embarrassed to bring it up openly. They would prefer that the doctor ask him about it. As a result of this we find a patient keeps on bringing the discussion indirectly to this subject. If we are alert we will perceive that the patient is asking to be questioned in this area. If now we make the appropriate inquiry all is well. If we omit to do this, the patient may feel we are insensitive, not in tune with him and conclude we are not the doctor for him.

One final word about the intrusion of another physician. We have already seen that there is an exclusive element in rapport. A patient will find difficulty in having a rapport with more than one doctor at a time. In this respect there is here a clear analogy to falling in love. The patient has rapport with his family doctor but may be referred to a specialist for treatment. If the patient continues to see his family physician for something else at the same time, rapport with the specialist may not develop. This is especially true if the specialist is a psychiatrist where rapport is essential for forming an effective therapeutic relationship. In such a situation the more frequent interruption by the family physician, the less effective will the psychiatric treatment be. Fortunately rapport is less important for success in other areas of medical specialism.

Some of the common errors in the formation of rapport come from the doctor being too busy to do all that he might do. He does not have time or inclination to listen to and consider the patient's feelings. Some come from insufficient knowledge of emotional problems and socioeconomic family backgrounds. Some came from lack of self-criticism and too much self-satisfaction, the so-called "Olympian complex." By not explaining things to patients in non technical language he may increase fear. If we are cold, aloof and stern no rapport can develop. If we are warm, understanding and sympathetic it will form quickly. If we make the patient feel at home and that we are concerned only with him during the interview, give him some latitude in expressing what he wants to say he is apt to conclude, "I need help and I have found someone who cares and wants to help me."

L.H.N.

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Platelets And Bleeding

In a recent discussion of supportive therapy in acute leukemia Dr. Emil Freireich[1] discusses some pertinent mathematical relations between platelets, bleeding and transfusion as follows:

1. At platelet counts below 1000/cu mm hemorrhage appeared on 92 per cent of days.

2. Gross bleeding such as melena or hematemesis occurred primarily with platelet counts below 10,000/cu mm.

3. Hemorrhage due to low platelets is rare with platelet counts above 50,000/cu mm.

4. Freshly drawn blood is the only source of platelets. It may be used as whole blood or centrifuged for three minutes at 1400 g. to yield platelet-rich plasma.

5. The platelets from two units of whole blood will raise the platelet count of a 30 Kg child by 25,000/cu mm.

6. The platelets from four units of whole blood will raise the platelet count of a 70 Kg adult by 25,000/cu mm.

7. Patients with sepsis or platelet loss or destruction require much larger doses than do other patients.

8. Transfused platelets disappear from the circulation at a rate of about 50 per cent daily.

9. Platelets should be transfused within six hours of collection for maximum effectiveness. However platelets stored 24 hours at 4°C in whole blood in ACD solution are 60 per cent as effective as fresh platelets in elevating the platelet count.

10. Platelet concentrates can be made but more than half the platelets are lost in the process.

Another way of studying the likelihood of bleeding in platelet deficiency is by the Ivy bleeding time. Raccuglia and Bethell[2] found that as long as the bleeding time was under seven minutes clinical bleeding did not occur; and this was not invariably related to the platelet count. Serious danger of hemorrhage was present when the Ivy bleeding time exceeded 30 minutes; with adequate platelet therapy the bleeding time decreased and hemorrhage diminshed.

In massive hemorrhage due to causes not related to platelets the platelet count may be as low as 70,000 cu mm due to using up or loss of the platelets, but prolongation of the bleeding time is rare. This is useful in interpreting coagulation studies done, as so often, during episodes of severe bleeding.

The effectiveness of platelet transfusion is dramatically illustrated when the platelet depression results from the use of multiple units of stored bank blood from which viable platelets have vanished. If one in every five units transfused in a single day is fresh blood generalized bleeding will not occur. If the stored blood has been used until bleeding is widespread one or two units of fresh blood will stop the bleeding promptly even though the platelet count does not rise appreciably.

Need for platelets is one of the very few indications for use of fresh whole blood instead of bank blood. If fresh blood is collected for this purpose it should be used promptly, not kept till the next day.

R.N.B.

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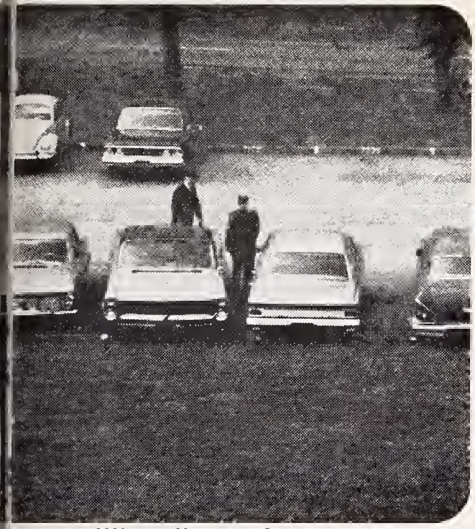

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Prehistoric Trephining

Eugene R. Rightmyer, M.D.

■ Every current that contributes to and swells today's total medical knowledge can be traced to distant sources and these, in turn, to less known tributaries. The history of medicine thus emerges as a composite, retrospective study. The investigations of archeologists, anthropologists and paleopathologists have tended to push the historic period (termed "historic" because of the availability of written documents) further and further back so that, in most cultural contexts, prehistoric medicine refers to a period antedating 4000 to 5000 B.C. However, there is no hard and fast boundary between historic and prehistoric medicine. The history of medicine has already antedated the Egyptian papyri and Babylonian inscriptions: it can now be read into the human remains, mural paintings and carvings, and stone tools of prehistoric man. Whether those prehistoric accounts will lose their original significance to new discoveries, further study or even to conjecture, time will tell. One such mute account is the trephined skull, testifying to a prehistoric operative procedure preserved and perpetuated in modern neurosurgery. This monograph re-emphasizes that tributary's medical legacy. Its antiquity is unquestionably unique.

> "The thing that hath been, it is that which shall be; and that which is done, is that which shall be done; and there is no new thing under the sun.
>
> Is there any thing whereof it may be said, See, this is new? it hath been already of old time, which was before us."[3]

In 1865 the dormancy in inquiry and the vacuum of documentation in prehistoric surgery were broken by the discovery of a medico-archeological classic: the trephined skull, left by neolithic man in southern France and uncovered by M. Prunières, a general practitioner over five thousand years removed. This eroded, bleached skull whose occipital region contained an oval fenestration, was misinterpreted as having been a skull-cup* until ingeniously evaluated by P. Broca and further studied by J. Lucas-Championnière.[9] In 1871 Broca France's endowment to anthropology and medicine proposed that this neolithic man had undergone and survived cranial surgery as evidenced by callus formation along the fenestration's margins. Furthermore, he suggested that those surviving the operation, had been considered endowed with mystical powers and that, when these individuals died, portions of their skulls (preferably including a part of the operative site) were used as protective charms against nervous system disorders. The latter hypothesis was based on a number of oval and irregular pieces of bone, the so-called "rondelles,"[15] which were found in the same excavation.

To "these dead bones . . . already outlasted the living ones of Methuselah," Sir Thomas Browne's words may aptly apply:

> "Time which antiquates antiquities, and hath an art to make dust of all things, hath yet spared these minor monuments."

And these "minor monuments" yielding to time and archeological excavation, have promoted a voluminous—if not comparatively torrential—flow of descriptive and deductive writings. Monographs exceptionally factual and complementary to their subjects, have been written by P. Broca, M. Prunières, J. Lucas-Championnière, M. Muñiz, F. Fletcher, J. Tello, L. Rogers and A. Hrdlička.

Unlike that of the musculoskeletal system, the evaluation of surgery upon the nervous system is not portrayed with comparable longevity, documentation and enlightenment in the archives of medical history. Because the correlation among neurophysiology, its anatomical substrate and clinical pathology was a relatively late scientific achievement, the promotion of neurological surgery was consequently curbed. And, although history has preserved and revered some notable exceptions, calculated surgical therapeusis within the craniospinal axis only emerged in the latter nineteenth century. The extirpation of a brain tumor by Sir Rickman Godlee in 1884 and of an extramedullary thoracic tumor by Sir Victor Horsley in 1887, were the first such operations based on neurological diagnosis and localization.[6] These and the subsequent pioneering efforts of Macewen, von Bergmann, Krause, de Martel, Vincent, Foerster, Frazier, Dandy, and especially of Cushing, enlightened centuries of protracted clinical description.

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* The fashioning of a drinking cup from an enemy's skull was a not uncommon practice among primitive cultures, an example being the Norsemen.

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Although the breadth and scope of intracranial surgery are being realized, directed, labelled and ever documented today, the prelude to its evolution far antedated 1884. Its earliest record is the archeological evidence of man's designed attempt and success in making an ante mortem hole in the skull: thereby, knowingly or not, approaching the central nervous system. This fragmentary record of the oldest major surgical procedure is the prehistoric trehined skull.[16] The early groundwork for our knowledge of this relic was laid by French and German scientists in the latter nineteenth century. Their two sources of cultural study were archeological relics and contemporary primitive races having Stone Age attributes and still practicing trephining.* Admittedly, both sources are subject to misinterpretation. By 1900 the very fruitful work of M. Muñiz in South America had compounded interest in trephined skulls throughout the world.[10, 11] His extensive travels through the ancient lands of the Incas in the 1880's and early 1890's yielded considerable archeological material among which were nineteen trephined skulls, all pertaining to a period two thousand years preColumbian.†

Anthropology classifies trephination‡ in our western civilization as a specialized craft, demonstrating differentation of labor by a specific social organization. In contrast, prehistoric trephination is a primitive craft performed with tools either undifferentiated or specialized for other purposes. Our cultural pattern does not allow scientifically untrained or shamanistic persons to trephine; among us trephining is a medical craft, devoid of mysticism or superstition and performed by recipients of a scientific heritage. In this century the neurosurgeon has been endowed with increasing diagnostic, pathologic, physiologic and technical knowledge. In his repertoire a fundamental, trephination, has now lost its prehistoric and primitive connotations.

During neurosurgery's evolution in the latter nineteenth century trephining was being practiced in contemporary primitive cultures in widely scattered parts of the world: in the South Pacific (New Guinea, Bismarck Archipelago, New Caledonia and the Loyalty Group), in the Caucasian province of Daghestan and in Algeria. Notable are the Kabyles, a nomadic Berber tribe in the Aures Mountains of Algeria, in whom trephining was practiced by a select group of priests for thaumaturgic and therapeutic reasons. This unique anthropological study has been documented by M. V. Hilton-Simpson in his monograph, "Arab Medicine and Surgery" (1922). The Kabylian patient, sacrifice or victim as may be implied, was subjected to a rather tedious and painful ordeal performed with crude metallic instruments (saws, perforators and elevators) and frequently staged over days. Care was taken to avoid trephining over cranial sutures§ and lacerating the dura. The successful operation undoubtedly enhanced the prestige of both priest and patient, a fact probably accounting for some repeated trephinations. In this study the demarcation between civilized and primitive trephination has become less distinct.

The accumulated relics of trephination document the persistence and modification of this custom in cultural evolution throughout history. Its distribution with respect to geography, time and culture shows its practice having been common to both the Old and New Worlds, from the Neolithic to the Modern Periods and from savagery to civilization. Trephined crania have appeared in widely scattered places, but by far the greatest numbers occur in two areas: neolithic western Europe (especially the Cevennes and Seine-Oise-Marne regions of France) and pre-Columbian South America (Peru, Bolivia and Equador). There are few countries in which they have not been unearthed. Falling far behind France are Great Britain (England, Scotland, Wales), Germany, Poland, Denmark, Sweden, Austria, Russia, Spain, Portugal and Italy.[12] Thousands of miles away they have been found in North, Central and especially in South America where the pre-Incan Stone Age dates thousands of years later than that in western Europe. (As regards Egypt, China, Japan and southern Africa, evidence of trephination is scanty or absent; however, it has been found in Siberia.) The relative uniformity of appearance and the scattered distribution in the world challenge any hypothesis of origin. That most accepted is a unifocal origin in Europe or possibly Asia during the Pleistocene Period with subsequent dissemination of this custom.

The large number of trephined skulls, over two hundred, found in France exemplify those found in the Old World. One usually notes a single oval, elliptical or seldom round hole,¶ often four to five centimeters in diameter, whose edges are smooth, bevelled inwardly and at times thickened by bony overgrowth. The edges are often very oblique at the expense of the skull's outer table, suggesting accomplishment by scraping with a pointed or chisel-like tool. (One wonders about neolithic man's impression of and respect for the underlying, pulsating dura.) The operation has been found on all parts of the calvarium, mostly in the parietal region and rarely in the forehead. Single openings are the rule although as many as three or four, diversely situated, are not rare. The similarity of the defects and their varying degrees of marginal callus unquestionably indicate a designed procedure with survival. Attributing them to cranial anomalies, disease or trauma is unacceptable.[4] In addition, the extent of callus has frequently suggested surgery at a very early age.* Both sexes have undergone this cranial surgery.

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* Especially found in North Africa and the South Pacific islands.

† Most of the skulls were found within a radius of sixty miles in the province of Huarochiri near Lima. In 1893 his Incan collection at his home in Lima was destroyed by revolutionists; fortunately, however, the skull collection was being exhibited in the United States that year.

‡ The modern trephine consists of a steel cylinder with sawteeth and a central pin to guide its first movements, the whole being rotated by an angled handle. Its prototype, the terebra serrata, dates back to Greek surgery (at least 500 B.C.).

§ The prehistoric trephiners of both the Old and New Worlds showed less respect for cranial sutures and sinuses.

¶ Information on a curious T-shaped cicatrix, known as the "sincipital T," can be found in P. Manouvrier's "Le T sincipital curieuse mutilation crânienne néolithique" (1895).

Above all, the master trephiners were in the pre-Incan culture, where this operation developed into a common, skilled art.[1,2,13] Here its frequency (2 to 2.5 per cent among excavated crania), incidence of callus formation at the operative site (approaching 75 per cent), varying sizes and multiplicity reflect the operators' dexterity.† Furthermore, evidences of postoperative osteomyelitis are rare. Some skulls show scratches on the adjacent outer table, suggesting an inexperienced operator or unco-operative patient.

There is much about prehistoric trephining that we do not yet know: especially the modus operandi, whether by chiseling, sawing, scraping, cutting, drilling or by a combination of these methods. The latter three methods are most probable and are well exemplified in the South American skulls. With the sharp-edged and pointed flints used in the neolithic period for defense, procurement and preparation of food and for the manufacture of other weapons and tools, the means for scraping bone was present.[8] The obliquity of the edges in many Old World skulls could be attributed to scraping. The method of cutting presupposes a flint saw whose back-and-forth movements would allow removal of a rectangular or polygonal cranial plaque from intersecting sawcuts. This is especially evident in the South American skulls and only sporadically seen elsewhere (France, Israel). The third probable method, drilling or exfoliative terebration, is performed with the modern perforator in making burr-holes. The same mechanical principle is seen in making a hole by rotating a pointed tool at one spot; this procedure could be extended to making multiple perforations in a circle and then removing the disc of enclosed bone. Such is evidenced rarely in prehistoric man but rather frequently among the Kabyles of Algeria.

In the Old World crania it is rarely possible to correlate an antecedent disease or trauma (as a fracture) with the trephination. Nevertheless, it is within the realm of conjecture—and possibility—that trephining may have become related to the treatment of head injuries. However, another clue is present. Along with the trephined skulls in France were unearthed the so-called "rondelles"[5] or cranial fragments, some round, some oval or oblong, frequently artificially polished and grooved, perforated or notched — description postulating their use as amulets or curios. In the majority of rondelles there is evidence of callus formation along an edge—further deducing their postmortem extraction from a trephined patient. An accepted hypothesis is that the amulet was worn for protection from the same disease (or injury) for relief of which the trephination had been performed. On the other hand, the thaumaturgic or mystical theory, of which Broca was a proponent, finds heavy support. In this case the operation, considered sacred, was performed on persons afflicted with insanity, idiocy or epilepsy to allow the imprisoned spirit or demon causing the disturbance, to escape.[7] (Unfortunately, there is no paleopathological proof of these central nervous system diseases.) If the trephined person survived surgery, he may have become the object of veneration; and a fragment of his operative site (excised postmortem), a symbol of the surgery's protective qualities or of the patient's powers of survival. Perhaps it is an unwarranted tendency of our day to interpret all primitive efforts in the supernatural and in superstition.

In pre-Incan South America there was a completely different anthropological atmosphere. Superstition and religious beliefs were probably not in the foreground of motives as evidenced by the absence of rondelles‡ and by the frequent association of fractures at the trephinations. The latter has created much discussion, the trend of which is to attribute their frequency to the types of weapons (sling, mace and hatchet) used.[14] Thus the therapeutic motive is foremost.

Whenever and wherever the first skull was trephined, one of these concepts—thaumaturgic or therapeutic—was the probable compelling motive.

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* No proof has been found in the few children's skulls that have survived the centuries.

† From a study of his collection (presently housed in the Peabody Museum at Harvard University), Tello had stated: "It is worthy of note that in a collection of 400 crania . . . 250 had more or less advanced cicatrices, thus revealing the survival of patients, and the astonishing success obtained."

‡ The veneration of the dead may have precluded desecration.

But, above all, that motive was adequate and culturally acceptable to those concerned.

And by us the accomplishment is unchallenged.

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Thomas Addison

In the year 1855 Thomas Addison, one of the greatest clinical observers which this country has produced, published a description of *The Constitutional and Local Effects of Disease of the Suprarenal Capsules.* In the preface to his pamphlet—one of the classics of medical literature—after pointing out that the pathologist may sometimes be able to throw much light upon the functions of diseased organs and that we are apt to forget how much of our physiological knowledge has been revealed by casual observations of the effects of disease, he goes on to speak of the adrenals, and adds: "It is as a first and feeble step towards inquiry into the functions and influence of these organs, suggested by pathology, that I now put forth the following pages." Yet that "feeble step" was destined to be epoch-making; for Addison's description of the disease which goes by his name was the starting-point of our present knowledge of the functions of the endocrine glands.

Let us pause, then, to consider how Addison set to work. He noticed that a certain group of symptoms was apt to occur in association—namely, anaemia, debility, remarkable feebleness of the heart's action, irritability of the stomach and a peculiar dingy or smoky discoloration of the skin—and that in every case in which this syndrome was met with extensive disease of the adrenals was found *post mortem.* So constant was this association that, in the later cases of the series, the disease of the adrenals was predicted during the lifetime of the sufferer.—Sir Archibald Garrod (B.M.J., 1926). *The Quiet Art: A Doctor's Anthology.* Compiled by Dr. Robert Coope. Edinburgh & London, E. & S. Livingstone Ltd., 1952, p. 68.

Ocular Dynamics In A Carotid-Cavernous Fistula

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■ This report is for the purpose of describing a traumatic carotid-cavernous fistula of an unusual origin which came promptly under medical observation. The data submitted are intended to enhance the available information on the acute vascular dynamic and ocular changes that can occur with the lesion. The origin of these fistulae calls attention to the peculiar and vulnerable vascular circumstance which exists in the cavernous sinus with a major arterial trunk residing in the lumen of a large venous channel. In the English literature Hamby has provided a recent and thorough review of carotid-cavernous fistulae, and an interesting historical sketch is included.[5]

Three quarters of these lesions are acquired through trauma, the remainder occurring spontaneously from the rupture of intracavernous aneurysms. Among those due to trauma, penerating wounds have occasionally been causative.[16] Hamby's review of the pathologic description of a carotid-cavernous fistula by Delens (1870) relates the original concept of a cavernous carotid artery divided by a splinter of bone. The intraosseous internal carotid artery may also be torn in closed head injuries, and the potential is realized clinically in the rare case of external hemorrhage from the artery through the base of the skull.[11]

Spontaneous closure of the fistula occurs in five to ten per cent,[5] and simple intermittent occlusion of the parent artery in the neck has afforded a cure or an improvement in an additional group.[9] A surgical attack may be necessary and common carotid artery ligation can effect a cure in as many as half the cases. Ligation of the cervical common or internal carotid, the intracranial internal carotid, the ophthalmic and the contralateral extracranial carotid arteries, alone and in combination, have been variously employed in the more refractory fistulae.[2] The intraluminal obliteration of the fistula with the introduction of a muscle plug through the internal carotid artery in the neck is a technical feat, but it can be effective in stopping the abnormal communication.[4] A significant number of these fistulae will persist despite all efforts.

Case Report

The patient, a 60-year-old white widow, presented at the Emergency Room of Yale-New Haven Medical Center on October 13, 1963, with a complaint of pain in the left eye. Shortly before her visit, she accidentally pierced the left upper eyelid with a heavy wire. On examination there was a tiny puncture wound in the left upper eyelid near the inner canthus and a moderate swelling and ecchymosis of the upper lid. She could not completely elevate that lid, and the globe was prominent. Extraocular movements were full range, and the pupils were equal and reacted to light. On fundiscopic examination the vessels were normal in appearance without venous engorgement. The vision was correctable to 20/20 in either eye. The visual fields were full on tangent screen examination with a three millimeter white target. The intraocular tension was 15.6 mm. Hg in each eye.

On roentgenographic examination, a soft tissue density was recognized in the region of the left orbit, but there was no evidence of an orbital fracture. The diagnosis of a penetrating wound of the orbit with a retrobulbar hematoma was made, and the patient was treated with tetanus prophylaxis and antibiotics.

On the morning following the injury, examination revealed a left sixth nerve palsy, and there was some weakness of upward gaze. Over the next several days she complained of left frontal headache; there was a progressive loss of the visual acuity in the left eye; and an increasing proptosis was recorded (Table I).

On the fifth day following the injury the patient, for the first time, mentioned the peculiar noise in her head. A loud bruit was audible over the left eye and the left temple, radiating into the left neck. The blood pressure was 180/85 and the pulse was 80. Mild compression of the left cervical carotid artery caused the diastolic component of the bruit to disappear, and as the occlusion was increased the systolic component also disappeared. A phonocardiogram confirmed

Table I

Chronological Clinical Data Relating to Examination of the Eyes, before and after Carotid Ligation

DATE	EXOPHTHALMOMETRY MM.		VISUAL ACUITY		INTRA-OCULAR TENSION MM. HG		OPHTHALMODYNAMOMETRY MM. HG	
	R	L	R	L	R	L	R	L
10/13/63	16	22	20/20	20/20	15.6	15.6		
10/15/63	17	24	20/20	20/30	21.9	21.9		
10/22/63			20/20	20/60				
10/24/63					17.0	21.9	60	55
Ligation Left Common Carotid Artery 10/24/63								
10/26/63	17	19.5			17.0	13.1	55	35
11/1/63			20/20	20/25	17.3	14.6	60	45
12/17/63	17.5	17	15/15	15/15	18.9	17.3	65	60

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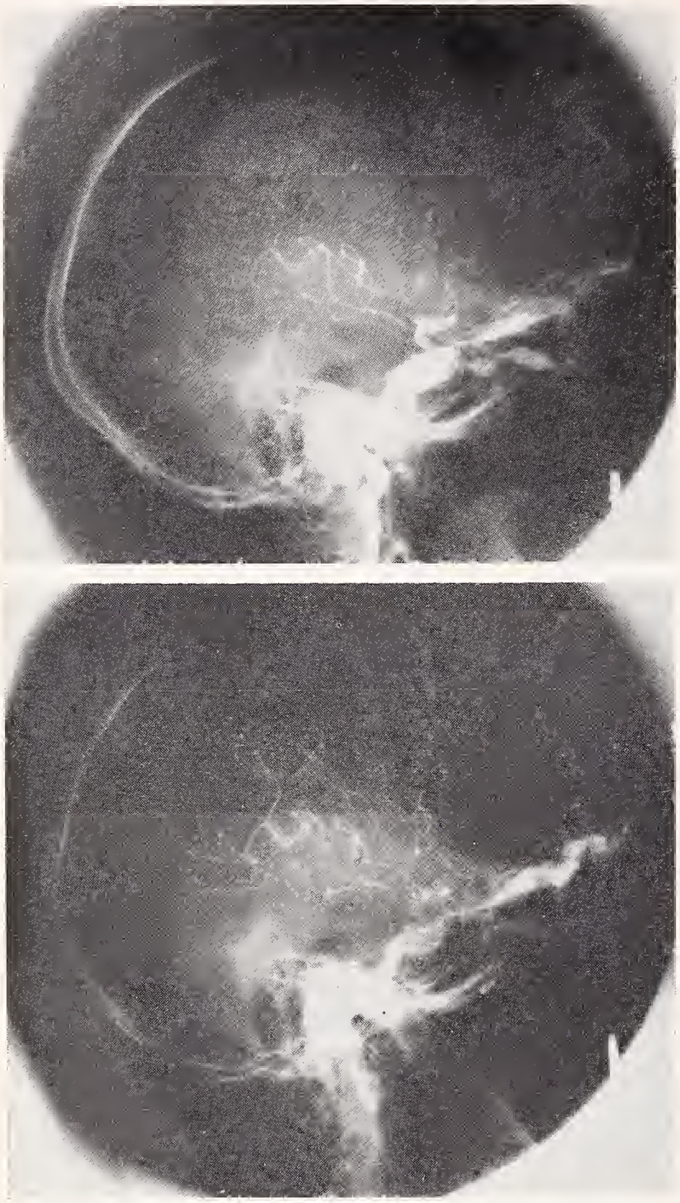

Figure I

Serial angiographic plates of the arterial phase, spaced three-quarters of a second apart.

the presence of both a systolic and a diastolic component.[8] Palpation and tangential viewing of the left globe revealed pulsation, and accentuated pulsation swings were detected on the tonometer.[1] There was a thrill over the eye. A lower altitudinal hemianopia of the left eye was present on tangent screen examination and it was progressive, as was the loss of visual acuity.

A left carotid arteriogram demonstrated a carotid-cavernous fistula (Fig. 1). On the first film of the arterial phase in the lateral projection, opaque material was seen in the cavernous sinus and the superior and inferior ophthalmic veins. There was also a reté of veins over the clivus together with dense opacification of the inferior petrosal sinus. On subsequent films, the angular vein of the orbit and the anterior facial vein were readily visualized, and the anterior vertebral veins were also opacified. The flow through the anterior and middle cerebral arteries was diminished, but the vessels followed a normal course. On the anterior-posterior projection there was faint visualization of the intercavernous sinuses.

On the day of admission a program of intermittent compression of the common carotid artery was commenced and the duration was progressively increased to fifteen minutes at a time. The fistula persisted and eleven days after the injury, under local anesthesia, the left common, internal and external carotid arteries were exposed in the neck. The common carotid artery was occluded for thirty minutes with no indication of cerebral dysfunction. Under various combinations of vascular occlusion, pressures were recorded in the carotid bulb. The mean pressure drop with common carotid occlusion was fifty per cent and the pressure differentials indicated a collateral flow from the external carotid. A fascial cuff was placed about the common carotid artery and a braided silk was placed about the cuff to ligate the artery. The bruit could no longer be heard by the patient or the examiners and the pulsation ceased. The left superficial temporal artery pulse was no longer palpable.

Postoperatively the patient was kept in the horizontal position and observed for lability of vital signs or evidence of cerebrovascular insufficiency. "Shock blocks" and five per cent CO_2 inhalation equipment were kept in readiness at the bedside. Over a period of seven days gradual elevation of the head of the bed was accomplished, and she was again on her feet.

Nineteen days after the injury, and eight days after the surgery, the vision in the left eye had improved to 20/25 and her visual fields were full to a 3 mm. white target. The proptosis and ptosis were lessened, however, the sixth nerve paralysis persisted. The changes manifest in the exophthalmometry, visual acuity, intraocular tension, and retinal artery diastolic pressure following the operative procedure are also recorded in Table I. At seven weeks following the carotid ligation the patient returned for a follow-up examination. She had resumed her work as a saleslady and was asymptomatic. The blood pressure in her left arm was 160/95. There was then a systolic bruit over the carotid bifurcation on the left, and the left superficial temporal artery pulsation was again palpable, although weak. There was no bruit over the left eye. The pulsation of the cervical carotid (common) was roughly equivalent on the two sides. There was a soft systolic bruit audible over the contralateral (right) ocular globe, which was stopped by compression of the right common carotid artery and was interpreted as a collateral bruit. This same ocular bruit was accentuated by compression of the common carotid artery on the left. The patient was not aware of any abnormal sounds. The visual fields were normal and the sixth nerve function was completely recovered. The exophthalmos had resolved.

On further examination three and a half months following the ligation, the retinal artery pressures were roughly equivalent, and finger compression of the left common carotid artery in the neck produced an immediate drop in the retinal artery diastolic pressure on the left, to a figure less than 30 mm. Hg. The left superficial temporal artery pulsation was also obliterated with that maneuver, and it seemed certain that the left common carotid artery was again conducting a flow of blood through the site of ligation.

Discussion

The visual apparatus is of primary interest and probably the most pressing reason for attempting a closure of the fistula, if it does not occur spontaneously. About a quarter of those with a carotid-

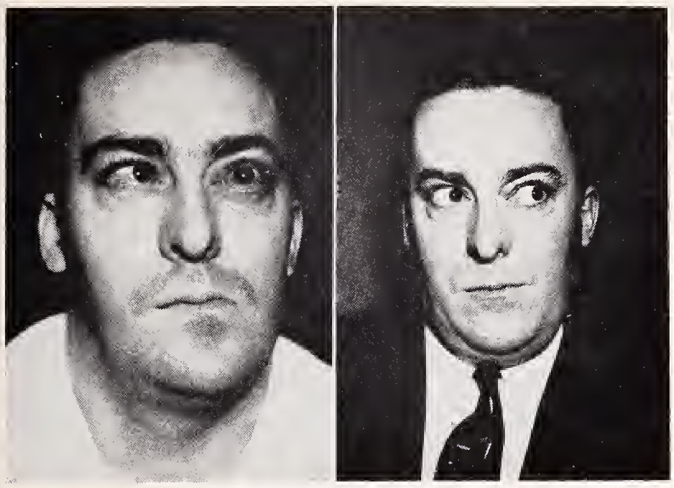

Figure II

Ocular manifestations of a spontaneous carotid-cavernous fistula before and after left internal carotid ligation.

cavernous fistula will suffer some degree of visual impairment.[10] The rapidity with which the visual mechanisms are secondarily affected and the severity of the disturbance dictate the aggressiveness of the therapeutic attack.

Some individuals have adjusted to the abnormal sound, and if the threat to the eyesight has passed they may no longer demand attention. Such was the case of the patient whose photographs (Fig II) depict the original and subsequent ocular manifestations of a fistula which is now of twenty-three years' duration. An initial ligation of the internal carotid artery on the left, carried out by Dr. German, relieved the sixth nerve paralysis associated with the fistula. His visual acuity remains normal and the degree of exophthalmos is stable. The man still has a loud bruit over either ocular globe and over the carotid bifurcation on either side, but he is leading a normal life.

Hamby has reported the likelihood of an almost immediate exophthalmos with carotid-cavernous fistulae. On the other hand, a penetrating wound and a secondary orbital ecchymosis, raise the question of a differential diagnosis between a retrobulbar hematoma and a fistula. In the case reported here, had the patient not called attention to the bruit and demonstrated a failing acuity, the fistula might have remained undetected even longer. The degree of exophthalmos was minimal by comparison with reported experiences, but there was a rapid recovery following the ligation, indicating that the fistula was contributing some orbital congestion.

The intraocular tension varied appropriately with the expected state of episcleral venous pressure and those changes which occurred were principally on the side of the lesion (Table I). The anatomy of the venous drainage for a given orbit is likely to determine the potential for an increase in episcleral venous pressure with a carotid-cavernous fistula. For an ocular drainage system, tributary solely to the cavernous sinus, the potential of an increased venous pressure is greater than it is with a system draining externally. The facility of other venous run-off for the arterial pressure into the internal jugular system is also a factor. A petrosal sinus, or other intracranial communication, of major cross-sectional area may conduct the flow away from the fistula with sufficient ease as to leave the tributary system of the orbit less affected. In most instances, however, the superior ophthalmic vein is hugely dilated. The lack of venous congestion in the fundus or in the conjunctival vessels in the case reported suggested, as did the minimal exophthalmos, a relatively low grade rise in orbital venous pressure, despite the angiographic demonstration of both superior and inferior ophthalmic veins filling from the cavernous sinus.

Among prior reports there are descriptions of glaucoma in association with carotid-cavernous fistulae.[14, 15] From the standpoint of increased intraocular pressure in the early period of a fistula, the elevation of pressure within the episcleral veins is, in all probability, the principal factor.[17]

The arterial pressure supplying the retina is, also, to be considered. The diminution in peripheral resistance in the internal carotid circulation, by virtue of the fistulous run-off, may result in diminished retinal artery pressure. In the face of a potential increase in intraocular tension, vascular insufficiency is doubly threatened.[6] It has been argued that proximal carotid ligation only serves to potentiate the threat of retinal artery insufficiency,[12, 13, 15] but in the early stages, as seen in the case here, the elevated tonometric pressure should respond to the concommitant lowering of the venous pressure.

There is reported a later developing glaucoma, attributed to rubeosis and angle encroachment by neovascularization[18] and under these circumstances reduction in arterial pressure may be damaging. Thus, intraocular tension is a singularly important determination and inspection of the angle is a necessary step in anticipation of proximal carotid ligation. Whether the increased globe pressure is due to a hemorrhagic glaucoma or to the rise in episcleral venous pressure, the retinal function is ultimately dependent upon arterial perfusion. The ratio at which these two factors is significant has not been determined, but it can be approximated.[3]

There was an appropriate drop in retinal artery diastolic pressure with the acute carotid ligation. Interestingly, in only one month it had reverted, and during that same time a left carotid bulb bruit developed, and the left superficial temporal pulse was again palpable. Recalling the report by Heyman *et al* on the duration of ophthalamodynametric changes after carotid ligation,[7] the likelihood of a return of flow through the left common carotid at the level of the ligature seemed probable. The fistula being asymptomatic and likely closed, it may be fortunate, for this older patient, that that carotid is again conducting bood to her brain.

Visual field defects are not commonly described with carotid-cavernous fistulae. With a penetrating injury the possibility of direct trauma to the nerve does exist.[9] It is possible, too, that globe displacement from orbital venous engorgement may result in a local pressure on the optic nerve. Similarly, the progressive loss of extraocular nerve function following trauma may result from intraorbital displacement. The sixth nerve is particularly vulnerable. Direct injury to these structures should produce immediate manifestations of altered function, and tardy signs may be taken as a result of pressure, or traction.

Summary

A particularly fortuitous set of circumstances surrounded this case of a carotid-cavernous fistula. The acute tonometric changes allow some insight into the dynamics which are liable to occur in the fluid compartments of the eye with the lesion and with the treatment of it. The changes here were only those relating to venous congestion and arterial perfusion and they were favorably minimal, and so it is likely in most, considering that less than a fifth of these fistulae are accompanied by the signs of glaucoma.

Amidst general concern for the difficulty in management of carotid-cavernous fistulae, it is well to recognize that some of them represent a benign process, and some can be dealt with simply. It remains difficult to anticipate which will close spontaneously or respond to treatment. It appears possible to define the basis of glaucomatous complications through the use of the ophthalmologic techniques discussed.

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A Glimpse At An Early Neuroradiological Landmark; The Contribution Of Arthur Schuller

Franklin Robinson, M.D.

■ It is a great pleasure and privilege to be among those present on this happy occasion to pay homage to Doctor William German, our dear friend and mentor. We have all felt the impress of his guiding influence in many ways, and meet today united by our deep affection for him. Most of us gathered here this day have had the pleasurable experience of observing Doctor German approach neuroradiological problems at his weekly conferences. One could not escape notice of the intense interest with which he pursues the X-ray findings, correlating these with the clinical picture, and exhibiting in the process an artistry all his own. We have indeed witnessed an accomplished neuroradiologist as he achieves his objectives of localization and estimation of the probable nature of the lesion with which he must deal surgically.

While a commander in the United States Navy, Doctor German, in collaboration with Doctor Hugh Wilson, contributed the section on the skull and intracranial lesions in "Clinical Radiology" edited by Captain George Utley Pillmore, published in 1947.[3] Therein are to be found an abundance of valuable guides both radiological and surgical, and many succinct and practical points in neuroradiological differential diagnosis. The precise exposition of the surgical and roentgenographic techniques to be followed for successful ventriculography is truly a gem and the methodology certainly has weathered the test of time. Their observations on the X-ray aspects of aqueductal stenosis, for example, as differentiated from those of posterior fossa tumor, the basal angle and the tapering "pencil point" sign, are familiar considerations which some here today may nostalgically recall as focal points of discussion in a past neuroradiological conference.

In recognition of Doctor German's penetrating and longstanding interest in neuroradiology, I would like to wander back in time to glimpse at an early important landmark in this field, the work of Doctor Arthur Schüller entitled, "Roentgen Diagnosis of Diseases of the Head."[8] Doctor Fred F. Stocking, a former student of his, translated the book from the German and it was published by C. V. Mosby in this country in 1918. The foreword was written by Doctor Ernest Sachs who was then Associate Professor of Surgery at Washington University and who heralded it as a milestone. Schüller is perhaps most widely known for his contributions in the field of the reticuloendothelioses. Prior to this text, an earlier major work was an atlas on the base of the skull, "Die Schädelbasis im Röntgenbilde" published in 1905[7] but unfortunately, not translated. Doctor Cushing refers to this last mentioned work as "Schüller's admirable atlas" in his section on deformations of the sella turcica to be found in his classic monograph, "The Pituitary Body and its Disorders."[1]

By way of background, roentgenography was probably first applied to the study of intracranial tumors by Obici and Bollici[5] and concurrently by Oppenheim[6] in 1897. The former carried out experiments with preserved specimens placed in the skull either with or without a brain. Oppenheim, though unsuccessful in his search for tumor shadows on the skull X-ray described the effects of neoplasm upon the skull and in 1901, first demonstrated radiologically the destructive effects of hypophyseal tumors on the sella turcica. However, it would seem that the first comprehensive radiological work concerning the skull and its intracranial contents is to be attributed to Schüller of Vienna and will very likely remain as one of the important landmarks in medical progress. The book became available in its translated form the same year that Dandy's paper[2] on ventriculography was published. The contributions of Moniz on angiography[4] were to come some years later. The advances in neuroradiological technology since seem almost incomprehensible.

The preliminary portion of Schüller's text deals with cranial mensuration and clearly reflects the strong influence of Germannic comparative anthropology of the latter part of the nineteenth century. The author proceeds to discuss his observations on the fundamental shape of the base of the skull as determined by the basal or sphenoid angle (the

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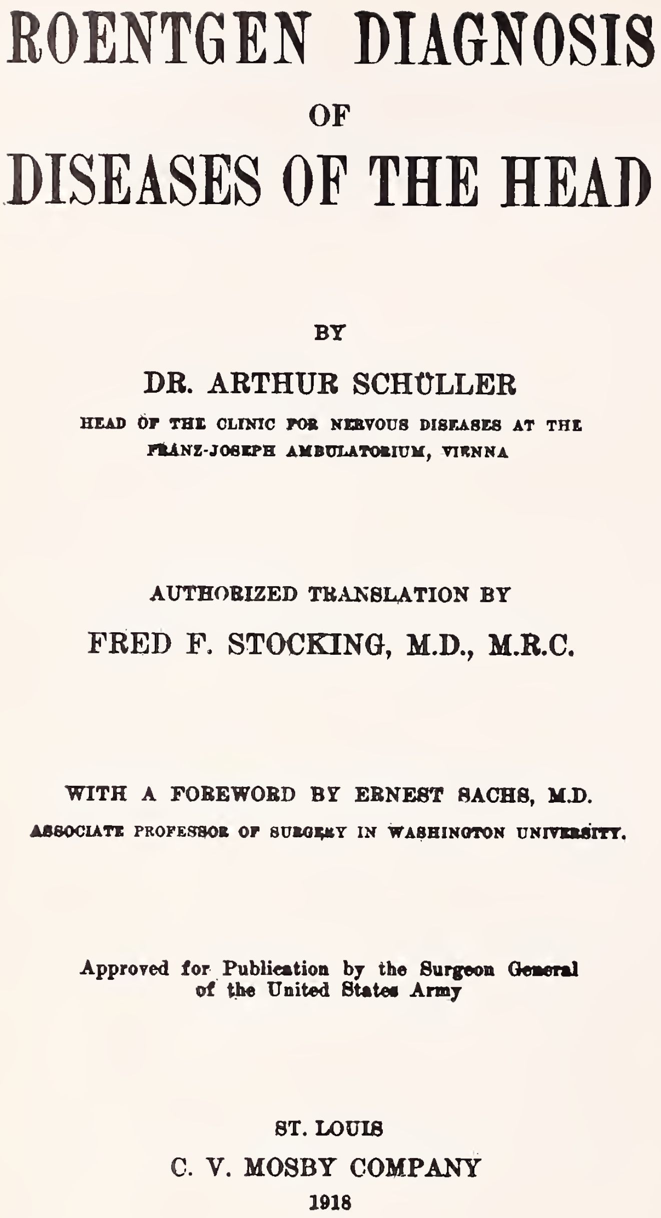

ROENTGEN DIAGNOSIS
OF
DISEASES OF THE HEAD

BY
DR. ARTHUR SCHÜLLER
HEAD OF THE CLINIC FOR NERVOUS DISEASES AT THE
FRANZ-JOSEPH AMBULATORIUM, VIENNA

AUTHORIZED TRANSLATION BY
FRED F. STOCKING, M.D., M.R.C.

WITH A FOREWORD BY ERNEST SACHS, M.D.
ASSOCIATE PROFESSOR OF SURGERY IN WASHINGTON UNIVERSITY.

Approved for Publication by the Surgeon General
of the United States Army

ST. LOUIS
C. V. MOSBY COMPANY
1918

Figure I
Title page of the first textbook devoted to neuroradiology.

angle formed by the line from the foremost point of the foramen magnum to the center of the sella turcica and from this point to the root of the nose). In abnormal obtuseness of the sphenoidal angle greater than 134°, flattening of the basal angularity exists (platybasia) and in abnormal smallness of the angle, pathological kyphosis is present. The diagnosis of platybasia in the living by means of the X-ray examination is therefore feasible.

Anomalies of shape and size of the skull in relationship to rate of sutural closure is outlined in some detail. He described the differential roentgen features of craniostenosis from those of microcephaly, commenting that the latter has, in addition, to small head size, open sutures and a somewhat thickened, rather than thinned, cranial vault. It is of passing interest to note that palliative trephination had but recently been introduced as a method of treatment for craniostenosis. The major types of skull deformity encountered in craniostenosis are methodically classified. The roentgen charges associated with obstruction hydrocephalus, consisting of skull enlargement, deepening of the sella, widening of the sutures and erosive changes of the skull base, are documented liberally with case reports. The most frequent causes of hydrocephalus in his cases were congenital malformation, inflamation, tumor, tuberculosis and congenital lues. He prophetically states, "perhaps it may be possible in the near future, with the aid of X-ray, to make a diagnosis of fetal hydrocephalus in utero." He goes on to describe the primitive practices of intentional deformity of the human skull still carried on even in his day in parts of northern and northwestern France. Flattening of the skull was accomplished by the laying of a cap over the anterior fontanelle, bandaging this in place, and continuing this from birth to the eighth year in the case of boys, and until marriage in the case of girls. Another type of artificial deformity was produced by circular bandaging in the anterior-posterior diameter. He notes that upon radiographic examination, the cranial sutures remain open in the artificially deformed skulls, permitting the grotesque distortion, while in pathologically deformed skulls of similar shape, in most instances, the sutures are closed prematurely.

The deforming influences of systemic diseases such as cretinism, rickets, chrondrodystrophy, mongolism, dwarfism and giantism, indeed curiosities in terms of today's medical experience, are included. For example, in the cretin, the persistence of structures, prognathism, steepness of the clivus and sella enlargement are seen. Studies of the rachitic skull reveal the significant changes to take place within the first two or three years of life, giving rise to pathological thinning, calcified osteoid tissue, hyperostoses and platybasia. Luetic involvement of the cranium was apparently not an uncommon lesion nor were other chronic inflammatory processes such as tuberculosis and actinomycosis.

Schüller's observations on platybasia, made from studies of skull specimens and radiographs, are classic, and were developed further in later writings. The neurological manifestations of compression of the brainstem, cerebellum and cranial nerves are meaningfully correlated with the anatomic distortions of the skull base. The radiographic manifestations of acromegaly, Paget's disease and hyperostoses are illustrated, as well as examples of tumor involvement of the skull. The section on cranial trauma is, in the main, concerned with the use of X-ray as an adjunct to surgery in the localization of penetrating foreign bodies.

Schüller was probably the first to appreciate the importance of pineal displacement in the roentgen localization and diagnosis of intracranial lesions. He stated, "the fact that one can often identify, in the roentgenograph of the skull, a structure lying intracranially at the typical place is of practical value, as the existence of a normal pineal shadow may enable one, in doubtful cases to decide against the presence of a pineal tumor. One can also, for example, in case of a displacement of the shadow of a pineal gland to the right or left of the median line, in symmetrically formed skulls, conclude the cause of its displacement to be pressure on the part of a tumor or traction on the part of a brain scar." These must truly have been novel diagnostic suggestions in a pioneering era.

Schüller places considerable emphasis on destructive changes seen in the base of the skull with intracranial tumors. We find description of erosive deformity produced by tumors arising within the sella as contrasted with the secondary sellar changes associated with chronic increased intracranial pressure. It is readily apparent that his clinical cases were generally of relatively advanced stage. Numerous line-drawings amply illustrate his thesis and the extent of his work testifies to his full devotion to the subject. His experience was drawn from ninety cases of hypophyseal tumor of which twenty-eight had been operated upon. In his early observations of skull changes in acoustic and other tumor in the cerebellopontine angle, it is of interest to note that he was perhaps more impressed with the effects upon the dorsum sellae than with the erosive changes of the internal auditory meatus. This is perhaps understandable in light of the technical limitations under which he worked.

The importance of Schüller's work lies in his recognition of neuroradiology as a specialized field rather than in any specific contribution. In this sense it occupies an historical place and no doubt has served as a catalyst in the thinking of those who followed in the field of neurological radiology.

Doctor German has taught us the lesson of the necessity of maintaining a close liaison between the radiologist and the clinician, each contributing his specialized talents. As physician and teacher, he has continued over the years this enriching relationship. Many of us have looked to his conferences, not only as an opportunity to see the clinical problems of every day but also to learn from his sympathetic yet objectively logical approach and to be inspired by his rare qualities.

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The Art Of Detachment

A rare and precious gift is the Art of Detachment by which a man may so separate himself from a life-long environment as to take a panoramic view of the conditions under which he has lived and moved: it frees him from plato's den long enough to see the realities as they are the shadows as they appear.—W. Russell Brain. Foreword. *The Quiet Art: A Doctor's Anthology*. Compiled by Dr. Robert Coope. Edinburgh & London, E. & S. Livingstone Ltd., 1952.

Labyrinthine Trauma In Head Injury

Lycurgus M. Davey, M.D.

Introduction

■ Dizziness, like headache, is an almost imponderable factor in the evaluation of the postconcussion syndrome. A clear definition of this symptom, which has many meanings, is essential to any discussion of this common sequel of head injury. Defined as light-headedness, faintness, blacking out, giddiness, or unsteadiness, dizziness may be due to systemic, ocular, proprioceptive, or psychogenic causes. This is unsystematized dizziness and will be considered in this article only where appropriate. When defined as vertigo, turning, or a disorientation of sensation in space, whether of the individual or of the environment, it is the primary symptom of disturbance of the vestibular labyrinth. This is systematized dizziness, or vertigo, and by definition will be the chief concern of this report.

As for the incidence of labyrinthine trauma in head injury—when the literature was reviewed, the incidence of dizziness was found to vary from 12 per cent[1] to 90 per cent.[2] The first of these figures referred only to the incidence of true vertigo, while the latter figure referred to "equilibratory disturbances," which, when examined, revealed that only four of the thirty-six cases showed true vertigo. Examination soon after admission to the hospital revealed in Mygind's series of 142 cases that about one-half of the patients had labyrinthine complaints, but spontaneous nystagmus was seen in only 18.3 per cent;[3] while in Harrison's series examined one to fourteen days after admission, positional vertigo and nystagmus were found in 15 per cent of the cases.[4] Thus, positional vertigo and nystagmus are the important signs of vestibular injury. These signs are more readily seen upon admission to the Emergency Room than when the patient is examined a few days or a few weeks later.

The present study is based on 101 cases of head injury referred specifically for evaluation of their complaint of dizziness. Of these, 63 were considered to be vestibular in origin.

Methods And Procedure

The neuro-otological studies of these 101 cases were analyzed for determination of labyrinthine damage. These studies included a specific history and neurological examination, with emphasis on vestibular symptoms and signs, tests of vestibular function, and, when appropriate, a battery of audiological tests and electroencephalography. The vestibular tests included those for positional nystagmus, for balancing, and caloric tests according to the method of Hallpike and Cawthorne.

The positional tests for induced nystagmus are performed by moving the patient from a sitting to a supine position quickly with the head first turned to the right. The maneuver is repeated with the patient's head turned to the left, and then with the head tilted straight back. Each position is held for at least 20 seconds. If any nystagmus is induced, its latency, nature, and duration are recorded. Usually, peripheral lesions will produce nystagmus of limited duration, while central lesions will induce nystagmus enduring so long as the critical position is maintained. With peripheral lesions, the induced nystagmus may often wear off completely with repetition of the maneuver.

The caloric test is performed, first with the water at 7°C. above body temperature, and then with the water 7°C. below that temperature—this water introduced into the external auditory canals for exactly 40 seconds. Each ear is tested successively, with five minutes being allowed between the start of each irrigation. The results of this test depend upon the relationship among all four irrigations. For a clearer understanding of the clinical interpretation of this test, two terms need definition: Canal paresis and directional preponderance. Canal paresis refers to diminished or absent reaction to both cold and hot water in one ear in comparison to the other. Directional preponderance refers to a greater duration of nystagmus induced in one direction than in the other. Canal paresis is indicative of a lesion of the semicircular canals or the vestibular nerve, while directional preponderance points to a lesion of the contralateral utricle or vestibular nuclei, or the homolateral temporal lobe.

For the purpose of the present discussion, these 101 cases of head injury were divided into two groups: Those with Vertigo and Those with Unsystematized Dizziness. Those with vertigo were

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further divided into central and peripheral vestibular injuries. In the present series, six cases were of the central type, and 57 cases were peripheral. The remainder represents those cases classified as unsystematized dizziness, due to causes other than labyrinthine injury.

The peripheral syndromes were divided into those with fracture of the petrous portion of the temporal bone, and those without fracture. For the latter, Voss[5] suggested the name "Labyrinthine Concussion."

The term labyrinthine concussion naturally includes auditory disturbances, but this report will be concerned chiefly with those cases of head injury manifesting vestibular symptoms. They have far exceeded the cases with purely auditory, or with combined auditory and vestibular symptoms, thus paralleling the experience of Lumio and Aho.[6] Fifty-seven of the present 101 cases of dizziness following head injury were diagnosed as labyrinthine concussion.

Briefly, the syndrome of labyrinthine concussion is characterized by severe positional vertigo and nystagmus in the acute phase, diminishing rapidly in the first few days, but more gradually later. Full recovery is the rule, although chronic cases have been encountered. The syndrome follows a blow to the head, usually in the occipital area, but not always associated with unconsciousness. Of the 57 cases of labyrinthine concussion in which the area of injury was specified, 51 per cent had blows to the occipital area, 26 per cent to the frontal, and 23 per cent to other areas, including the opposite end of the spinal axis.

Results

It was found that there are four phases to the syndrome of labyrinthine concussion: Acute, Recovery, Convalescent, and Chronic. The acute phase must be seen immediately after injury, as it lasts usually for not more than 48 hours. It is characterized by severe positional vertigo and nystagmus, elicited most often with the involved labyrinth undermost. The vertigo may be so violent that nausea and vomiting ensue. Patients quickly learn to avoid the critical position. The symptoms are frequently mistaken for evidence of increased intracranial pressure, but the neurological examination is normal except for the vestibular signs.

By the third day the recovery phase begins. Positional tests still elicit nystagmus, but only mild vertigo. Caloric tests are now tolerated by the patient and usually show a marked degree of directional preponderance to the side opposite the involved ear. Balancing tests show unsteadiness, particularly on the tandem test with eyes closed. This stage lasts about two weeks.

The third, or convalescent phase, may persist for up to six months. It is less definite and may represent only the psychogenic reaction to the vertiginous symptoms experienced earlier. Positional tests produce little vertigo and only slight nystagmus of short duration.

It was further found that the chronic phase may last for 18 to 24 months, and that this is a more indefinite prolongation of the previous phase. True vertigo has not been seen in this phase. If true vertigo should persist, an undetected fracture involving the vestibule[7] or a central cause should be suspected. Psychogenic factors confuse the picture and unless the entire course of the patient's problem is taken into account, this group is commonly labelled as psychoneurotic. This opinion is usually fortified by the relatively minor evidence of trauma.

Those head injuries with fracture of the petrous bone give rise to loss of function, which may be purely cochlear, purely vestibular, or more frequently, a combination of both. Hearing loss may be immediate or late. It may be temporary or progressive. The type and location of the fractures are the determining factors.

Fractures of the temporal bone were divided into two groups: Longitudinal and transverse.[8] The longitudinal fractures extend from the anterior border of the petrous pyramid where the Gasserian ganglion makes an indentation in the bone to the tegmentum tympani laterally. The transverse fractures cross at right angles to this long axis, usually at its weakest point, the vestibule. This is the reason that transverse fractures of the pyramid destroy the membranous labyrinth and usually give rise to total cochlear and vestibular deficits. The longitudinal fractures may also give rise to total loss of labyrinthine function; but if the fracture is situated on the anterior border of the bone, it is more likely to give rise only to cochlear symptoms, whereas located on the posterior aspects of the petrous, it is more likely to give purely vestibular symptoms. Tiny fissure fractures of the labyrinth have also been described; and these may be located anteriorly, posteriorly, or midway between and produce respectively cochlear, vertibular, or combined lesions.[9] Fractures of the petrous pyramid are often extremely difficult to identify in ordinary views of the skull. Recently developed tomographic technics[10] should prove particularly helpful in identifying these fractures.

Pathology

With fractures of the petrous bone, there is hemorrhage into and disruption of the membranous labyrinth with total loss of function. In the chronic state, the labyrinth is filled with fibrous tissue and often shows formation of endosteal bone. The fracture line in the petrous bone may be visible for years as the bone is of a late embryonal type which does not heal by formation of callus. Only fibrous connective tissue is seen in the fissure.

Experimental lesions which did not result in fractures of the petrous bone have demonstrated hemorrhages into the perilymphatic and also the endolymphatic spaces. Blood along the cochlear and vestibular nerves may also play a role in the production of symptoms in such injuries.[11] Denny-Brown and Russell[12] have demonstrated changes in the neurons of the vestibular nuclei and have indicated that these changes may be reversible. Both peripheral and central perilymphatic and perivascular infiltration of blood cells have been described[11] thus giving an anatomical basis for the contention that posttraumatic vestibular disturbances may have both a central and a peripheral mechanism.[13,14] Finally, Cawthorne[15] has postulated that small disruptions of the otolithic membrane of the utricle are possible in acceleration and deceleration injuries.

Discussion

In the diagnosis of labyrinthine trauma, positional vertigo and positional nystagmus are more commonly seen earlier than later. Furthermore, the trauma to the head may be relatively slight, often insufficient to cause unconsciousness. In such patients vomiting is a sign of vestibular disturbance and should not be taken for a sign of increasing intracranial pressure. Most of these patients will show spontaneous nystagmus, which will be more pronounced on lateral gaze to one side or the other. If the patient is found to have a preferred position in bed, vertigo of the positional type is probably present and can be confirmed with the positional tests.

Differentiating peripheral from central lesions may be difficult; but generally, when the caloric tests demonstrate both canal paresis and directional preponderance, the lesion is more likely to be peripheral. This localization is further justified if there is hearing loss on the involved side. Directional preponderance may be indicative of a central vestibular lesion, but more often it has been indicative of a peripheral utricular lesion. The rapid subsidence of both positional nystagmus and positional vertigo is in favor of a peripheral localization for the lesion.

Central localization of the lesion is to be inferred when there are associated neurologic signs or involvement of other cranial nerves. However, it should be remembered that fractures of the petrous bone may cross the internal auditory meatus, thus causing damage to both the 7th and 8th cranial nerves without producing a central injury. Vertical nystagmus or asymmetry of spontaneous or induced nystagmus is also consistent with the diagnosis of a central lesion. In those cases in which electroencephalographic abnormalities are noted, a central lesion may be suspected.

The localization of vestibular disturbance following head trauma has not been accorded any unanimity or even uniformity of opinion. Friedman, Brenner, and Denny-Brown[16] have claimed a central localization for the vestibular disturbances. Barany,[17] among the earlier investigators, and Cawthorne [15] among the present day investigators, have held that the lesion was peripheral in origin. Lange and Kornhuber[13] have indicated that the picture is complicated by cases in which both peripheral and central lesions are combined. Among the Russian investigators, Kotova[14] indicates isolated manifestations of peripheral vestibular insufficiency are obtained only during the first few days after injury and that later vestibular signs are always central in character. These central disturbances are ascribed to increasing interference of circulation of blood and cerebrospinal fluid affecting the central vestibular pathways. On the other hand, Lange and Kornhuber[13] have found spontaneous nystagmus with the aid of the electronystagmograph in patients tested months and even years after their head trauma. Sixty-three per cent of these cases were considered to be peripheral in origin. The present series favors a predominantly peripheral origin of vestibular symptoms after head trauma.

Finally, while vertigo may be the undisputed herald of labyrinthine injury, posttraumatic giddiness may represent the weak residue of minimal vestibular disturbances. Several cases in this series have demonstrated in the earlier phase of the injury undeniable vertigo which trails off into a vague giddiness during recovery. Thus, giddiness may be a sign of recovery from vestibular trauma but only when a history of antecedent vertigo has been obtained. On the other hand, giddiness may simply represent an autonomic response to an emotionally conditioned sequel of vertigo. In any case, giddiness without antecedent vertigo is not a reliable symptom of labyrinthine trauma and should be interpreted in the light of the psychological factors or other than vestibular factors, surrounding the problem.

Conclusions

Head injury may result in trauma to the labyrinth. When the trauma involves a fracture of the petrous bone, the basis for both vestibular and cochlear symptoms is clear. Such is not the case in the absence of fracture and, yet, injuries to the labyrinth do occur without demonstrable fracture. These injuries may manifest cochlear and vestibular symptoms, either combined or separately. This is the syndrome of labyrinthine concussion, in which the cases of purely vestibular symptoms preponderate. The evidence favors a peripheral localization of the seat of pathology.

The key to the evaluation of the vestibular symptoms lies in an understanding of the complaint of dizziness. A battery of appropriate vestibular studies will help differentiate between unsystematized and systematized dizziness. This latter symptom is true vertigo, and adherence to its clear definition will aid in the interpretation of dizziness when it occurs as a sequel to head injury. It will render one imponderable feature of the postconcussion syndrome—dizziness, somewhat less baffling.

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The Upright Posture

The simplest case in which the conditions common to most other animals have been drastically rearranged in man is the upright posture. The essential mechanics of the skeleton and of the circulation were established, and as it were tried out, in quadrupedal forms through an enormously long space of time. Upon this well-proved arrangement, and it would seem rather suddenly and without a fundamental mechanical reorganization, was imposed a posture which threw on the old scheme fresh strains that have tried it to within reach of the actual margin of safety. The results of this late and, so to say, hurried revision of the structural plan show themselves far and wide in the pathological field. It is not unreasonable to see these strains as important factors in the so-called static deformities, and in the excessive liability of the lower limbs to diseases of the bones and joints and to circulatory disorders on both the arterial and venous sides. Echoes of the same disturbing element are perhaps to be found in abdominal pathology and even in the peculiarities of the cerebral circulation. In general, however, it is perhaps in relation to the special qualities of the circulation as a whole in man that the upright posture should arouse the most caution in applying the results of animal experiment.—*The Collected Papers of Wilfred Trotter, F.R.S.* London, Oxford University Press, 1946, p. 108.

Experience With The Chlormerodrin-Hg Brain Scan

A Preliminary Report Of 163 Cases

Oscar A. Turner, M.D., A. Thomas Laird, M.D., and Sanford R. Weiss, M.D.

■ Although radioisotopic diagnosis has been in use for several years, it is only recently that it has become accepted as a reliable method of diagnosis and localization. Its use, however, is not widespread, possibly because the present sophisticated techniques entail considerable expenditure of money as well as specialized knowledge concerning both the radioactive agents used and the equipment employed.

The present communication constitutes a preliminary report on 163 consecutive cases in which radioactive mercury was used for diagnostic purposes in suspected brain tumor. Chlormerodrin-Hg^{203} was used except in a few cases where Hg^{197} was substituted, the latter having a half life of 65 hours compared to 28 days for the former. Using a Picker Magnascanner, scanning was done 4 hours after the intravenous administration of about 800 microcuries of Chlormerodrin, the patient having received 1-1.5 cc. of mercuhydrin the day previous as a blocking agent to reduce or minimize the renal uptake. A nineteen hole, focused collimator was used, scanning at a rate of 16 cm. per minute except where the patient's restlessness or condition required a more rapid procedure. Two scans were obtained, one lateral and one either anterior or posterior, depending upon the suspected location of the lesion. A preliminary, rapid hand scan was found to be of value in determining the lateralization and the position to be used where the clinical manifestations gave insufficient information.

Included in the present report are only those cases which the Neurosurgical Service had an opportunity to examine, but the study represents a combined project of the Departments of Radiology and Neurosurgery.

Of the 163 scans included in this report, 50 were positive, showing a localized increase in uptake recognizable in both the lateral and antero-posterior or postero-anterior view. Of the 50 positive scans a tumor was verified by operation or autopsy in 29 instances, in addition to which there was one case of an aneurismal cyst of the frontal bone and another of a chronic subdural hematoma, together constituting 31 verified surgical lesions. There were eleven additional cases in which the lesions were confirmed by other diagnostic procedures but in which operation was not done for a number of reasons. In this group of eleven cases, there were three instances of metastatic tumor, one case of angiomatosis of the brain readily visualized in the angiogram and seven instances in which there was overwhelming evidence of a brain tumor. Of the 50 positive scans, it is considered that 42 represented surgical lesions with 8 cases in which a positive scan was obtained but no tumor or similar type lesion being found. Table I lists more information concerning these 8 cases.

TABLE I
POSITIVE SCANS—NO TUMOR

Cerebral infarct (one embolic)	5
Viral encephalitis	1
Basal meningitis	1
Pituitary area—? positive (Negative exploration)	1
	8

There were six instances in which the scan failed to identify the tumor. Of these, three were cerebellar lesions, two being metastatic tumors and one being an astrocytic cyst removed surgically. One failure was a Grade I astrocytoma of the tip of the temporal lobe, this being one of our first experiences in the interpretation of brain scans. Two pituitary adenomas also were not identified but in the group of seven tumors confirmed but not verified at operation, there was one case of pituitary adenoma which gave an excellent scan picture and in which there was characteristic, clinical, radiologic, arteriographic and visual field studies to establish the diagnosis. Our experience has coincided with that of others in that the uptake of the isotope by muscle will frequently obscure an underlying concentration of radioactive material in the brain. Thus, tumors of the sella are often missed due to uptake by the facial and temporal

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musculature while those in the posterior fossa, such as cerebellar and cerebellopontine angle tumors, are frequently obscured due to uptake by the heavy suboccipital muscles. However, the technique employed by Rhoton et al[1] may be of value in identifying posterior fossa tumors with greater reliability.

The use of brain scan has proven to be much more than a mere survey device. It represents a diagnostic procedure which is without significant hazard, is readily acceptable to the patient and which does not upset the circulatory or intracranial pressure balance as might occur in other diagnostic means. The method has been of tremendous value not only in identifying primary tumors of the brain, but in recognizing single and in many instances, multiple metastases in individuals whom one would hesitate to subject to pneumoencephalography or arteriography. Although the isotopic scan has certain limitations, it does define the lesion more clearly and accurately and is relatively uninfluenced by local or generalized cerebral edema, peculiarities of the local vascular pattern or increased intracranial pressure. It has been our impression that the area of increased uptake seen on the scan film is somewhat smaller than the actual extent of the tumor found at operation; neveretheless, the scan very frequently gives positive information in terms of the extent of the tumor, which can only be surmised from the findings in arteriography or air study. This has been of particular value where growths tend to cross the midline. In the present series, with few exceptions, the positive lesions were confirmed by other diagnostic means, usually angiography but occasionally pneumoencephalography. The scan has been a particular help in identifying tumors placed posteriorly in the hemisphere where angiography frequently gives only minimal information.

As with other mechanical means of diagnosis, there are certain limitations which must be recognized and taken into account in interpretation. Scanning done within 24-48 hours after arteriography may give erroneous results, probably because of changes in the blood-brain barrier.[2] The same is true of scanning done following intracranial surgical procedures or extensive trauma to the cranio-cerebral structures. Although it was at first thought that this method might be a means of identifying tumors alone, it became apparent that non-neoplastic lesions frequently would give a positive scan. This is true particularly of cerebral infarcts and as yet no specific means has been recognized which would identify the increased uptake secondary to changes in a localized area of cerebrovascular insufficiency. The matter of time relationship between cerebrovascular thrombosis and increased uptake of the isotope is at present under further study.

In the present series there has been nothing to indicate a correlation between the type of activity of the tumor and the density of the isotope uptake. Indeed, in one of our more recent cases, the greatest concentration of isotope uptake we have encountered occurred in an area which upon exploration proved to be that of a fairly recent cerebral infarct. Figure I illustrates the well circumscribed and rather dense uptake in a meningioma and can be compared with Figure II showing uptake in a glioblastoma. Generally speaking, craniopharyngiomas, pituitary adenomas, colloid cysts of the third ventricle and under some circumstances, tumors of

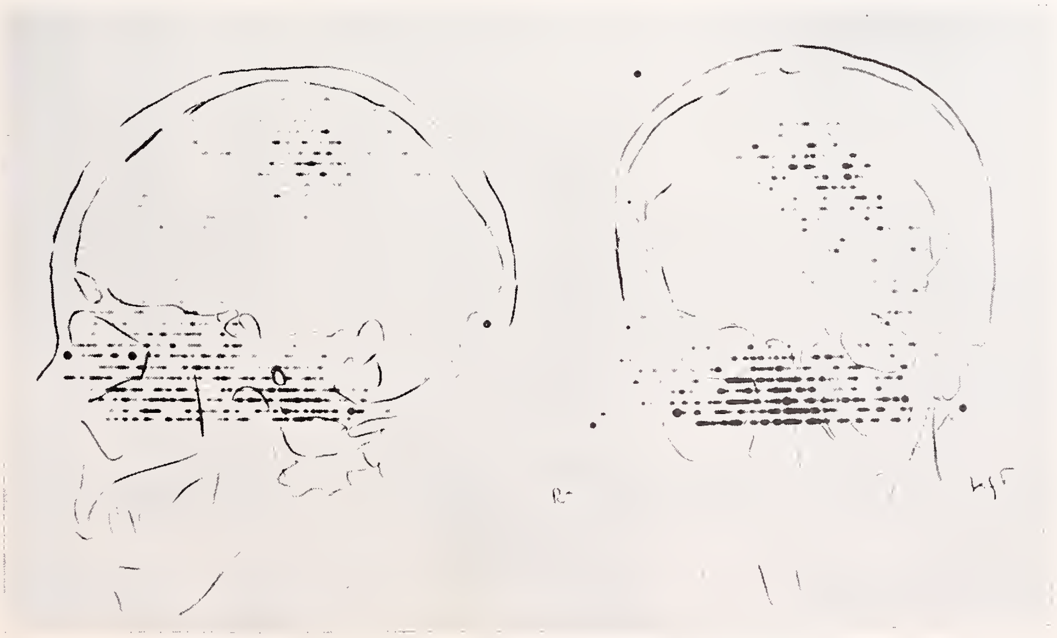

FIGURE I. Scan illustrating uptake in parasagittal meningioma.

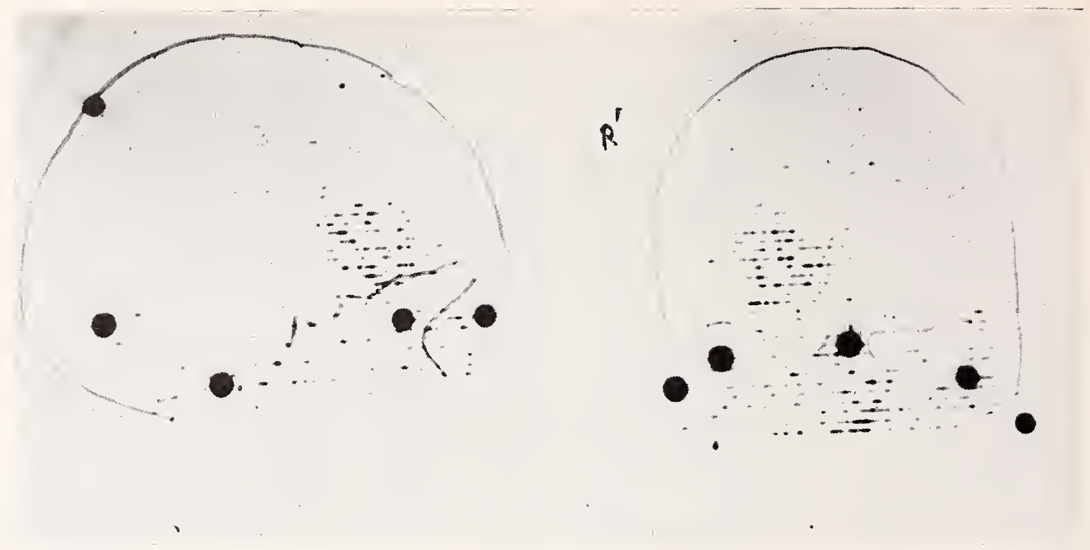

FIGURE II. Scan showing concentrated uptake in a right frontal glioblastoma multiforme.

the posterior fossa are not identified with any great degree of reliability. Table II lists the types of lesions found in the verified positive scans.

TABLE II

POSITIVE SCANS VERIFIED AT OPERATION OR AUTOPSY

Astrocytoma	6
Gliobastome Multiforme	6
Meningioma	3
Anaplastic glioma	1
Oligodendrogloma	1
Ependymoma	1
Neurofibroma	1
Melanoma	1
Metastatic tumor	9
Aneurismal cyst of bone	1
Chronic subdural hematoma	1
	31

POSITIVE SCANS CONFIRMED BUT NOT VERIFIED AT OPERATION OR AUTOPSY

Angiomatosis of cerebrum	1
Metastatic tumor	2
Other cerebral tumor	7
	11
Total	42

Dugger and Pepper[3] in a report on the results of 119 scans, using Chlormerodrin-Hg^{203}, found 57 positive scans with an accuracy of 92 per cent comparing favorably with other neuroradiological diagnostic procedures.

In some instances non-surgical lesions will occasionally give a positive scan, these including particularly cerebral infarct and meningitis. Rhoton, Carlsson and Ter-Pogossian[4] report 7 scans from a total of 67 patients showing focal uptake without tumors; 6 from cerebral infarctions and 1 in a patient wtihout demonstrable pathology who had an angiogram the day prior to scanning. These 6 patients represent the positive scans in 16 instances of cerebrovascular disease, a higher incidence of positive scans than is usually seen in the type of lesion. They suggest that the scan may prove useful in differentiating cerebral ischemia without infarction from those with ischemic necrosis.

In summary, Chlormerodrin-Hg brain scan has proven to be an extremely useful neuroradiological diagnostic procedure, having a high degree of accuracy, giving, in most instances, definitive information and entailing minimal risk and discomfort to the patient. The story on the capabilities of this means of diagnosis is far from complete; the potentialities have only been touched upon and many ramifications have yet to be explored.

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Scoliosis With Paraplegia

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■ The rare occurrence of paraplegia complicating scoliosis represents a complex problem which the Orthopaedic Surgery Service has faced twice in the last several years. Both of these patients were treated as part of a combined effort with the Section of Neurosurgery under the guidance of Dr. W. J. German, whose skill and judgment were vital to the ultimate good results obtained.

Studying the severe angulation of an advanced scoliotic spine with curves of well over 90° one can't help but wonder why compromise of spinal cord function does not occur more frequently. Yet in a large series, paraplegia appeared in only .03 of 1 per cent of patients with non-tuberculous scoliosis.[1] In 1915, Ridlon, of Chicago, described the first two cases in American literature and stated that he was unable to offer any explanation for the paraplegia.[2] Since that time, several authors have reported their cases and reviewed the literature,[1,3,4,5] and gradually certain points of pathogenesis and treatment have become clear. All the patients had onset of their spinal deformity early, either from congenital anomaly of the spine, early and severe poliomyelitis, or severe idiopathic curves. The majority of them had considerable kyphosis in association with lateral curvature, but if a purely lateral curve existed it was quite sharp in the upper dorsal region where the cord is relatively crowded in the spinal canal. The onset of symptoms most frequently corresponded to the adolescent growth spurt, and the neurological level to the apex of the curve. Most important, the onset of symptoms was frequently insidious, but once symptoms appeared progression to severe embarrassment to cord function occurred in ninety-five per cent of the cases.

Fifty years ago, Ridlon treated his two cases by rest on an orthopaedic frame with improvement in one, and deterioration in the other. This reflects the general prognosis of treatment by rest and immobilization, with fifty per cent of the cases improving, and the remaining fifty per cent either remaining static or deteriorating. With this generally unfavorable picture offered by conservative treatment, surgical exposure of the spinal cord at this level of dysfunction has been performed in most of the recent cases. The cord has frequently been found to be coursing over a sharp lateral or anterolateral angulation in the spinal canal. At this point, a bony wedge anteriorly or occasionally a band of fibrous tissue posteriorly may be found. Most commonly however, there is no localized anatomical projection. The dura is seen to be tightly stretched over the angulated cord, and the cord, tethered by its roots, is in turn compressed by the tightly stretched dura. Most observers have emphasized that it is not the cord itself which is stretched, but the dura. Preoperative myelographic block is the rule, and at surgery the dura is usually not pulsatile. If the dura is opened the posterior arachnoid vessels are found to be poorly filled and the cord is often flattened at the apex of the curve.

The neurosurgical treatment of this situation should consist of decompressive laminectomy and inspection of the contents of the spinal canal. If a localized anatomical lesion is found either in the form of a bony spur or a fibrous constricting band, this can be removed first without opening the dura. However, most cases require wide opening of the dural sac and frequently extradural section of roots at the apex of the curve to unleash the cord. If this is insufficient, actual transposition of the spinal cord anteriorly into a trough cut in the vertebral bodies or antero-laterally onto a bed prepared by removal of facets, transverse processes, and ribs, can be done. The resection of nerve roots is, of course, functionally limited to the relatively unimportant midthoracic roots which do not supply the extremities. Even sacrifice of midthoracic roots may not be a completely benign procedure since sacrifice of the segmental blood supply traveling with those roots may compromise nourishment to the spinal cord at a time when it is least tolerable.[6] Schneider has pointed out that segmental supply to the cord at the level of T4 is particularly deficient and cautioned against root resection at this level.[5]

When neurosurgical measures have gained all that is possible, the question of stabilization of the spine arises. Some observers have felt that fusion is inadvisable at the time of laminectomy because of prolongation of operation and an increased possibility of hematoma formation.[3] Others also have stated that once decompression and transposition of the cord is accomplished, spine stabilization may

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prove to be altogether unnecessary.[1] We, however, agree with Love that absolute stability of the spine about the area of cord compromise is of the utmost importance.[4] One must remember that while a conservative laminectomy in the presence of normal vertebral bodies, disks and ligaments probably does not render this spine unstable, the extensive excision of joints and lateral structure necessary for translocation of the spinal cord must certainly do so. These severely scoliotic spines do not articulate normally, and the frequent finding of disrupted disk material anterior to the cord in these cases should lead one to consider that instability may be just around the corner. Fusion then, either posterolateral or anterior, is probably indicated in cases where there is any question of instability, or any possibility of the future increase of the deformity. The Harrington procedure[7] may be added to the posterior fusion when internal fixation is needed to reduce angulation.

Two cases of scoliosis with paraplegia have been treated at the New Haven Hospital since 1954 and demonstrate most of the points mentioned above.

Case Report No. 1

S.O., a twelve year old white male, was admitted to the New Haven Hospital May 6, 1955, with a three week history of weakness in the legs, ataxic gait, and spasticity. He had a severe dorsal kyphoscoliosis associated with hemivertebrae and rib anomalies but had had no past history of neurological problems. Myelogram showed a complete block and a decompressive laminectomy was performed immediately. The dura was closed tightly at the end of the procedure. Forty-eight hours postoperative his paraplegia was total and profound, and a re-operation with opening of the dura was performed. At this time two tethering roots were sacrificed, but transposition was not performed. His paraplegia improved rapidly. On June 20, 1955, he had a transpleural interbody fusion of D5-D10 and on July 21, 1955 a postero-lateral fusion of D1-D5, in an effort to avoid progression of deformity. He was discharged one month later, walking in parallel bars, and continued to improve at home until he could, within the year, walk without support. However, in May of 1958, three years after his original surgery, he had a recurrence of his paraplegia in association with pseudoarthroses of both anterior and posterior fusion, and increasing kyphoscoliosis. He was readmitted and on September 15, 1958 an anterolateral transposition of the spinal cord and simultaneous refusion was performed. At this time he was completely paraplegic. Again he gradually cleared over the course of the year following surgery, and this time maintained his improvement to date. His only residuum is weakness of the dorsiflexors of the right foot which requires a short leg brace. He is otherwise asymptomatic and is able to work full time and lead a normal life.

Comment

This case illustrates the importance of leaving the dura widely open following decompression in the case of scoliosis, and the equal importance of stabilization of the spine for a favorable long term result. This patient went three years with good function in the face of pseudoarthrosis of his fusion, but ultimately suffered recurrence of the paraplegia probably as the sum total of repeated minor trauma to the cord from instability of the spine. It also illustrates the value of the combined approach by the neurological and orthopaedic surgery to this complex problem.

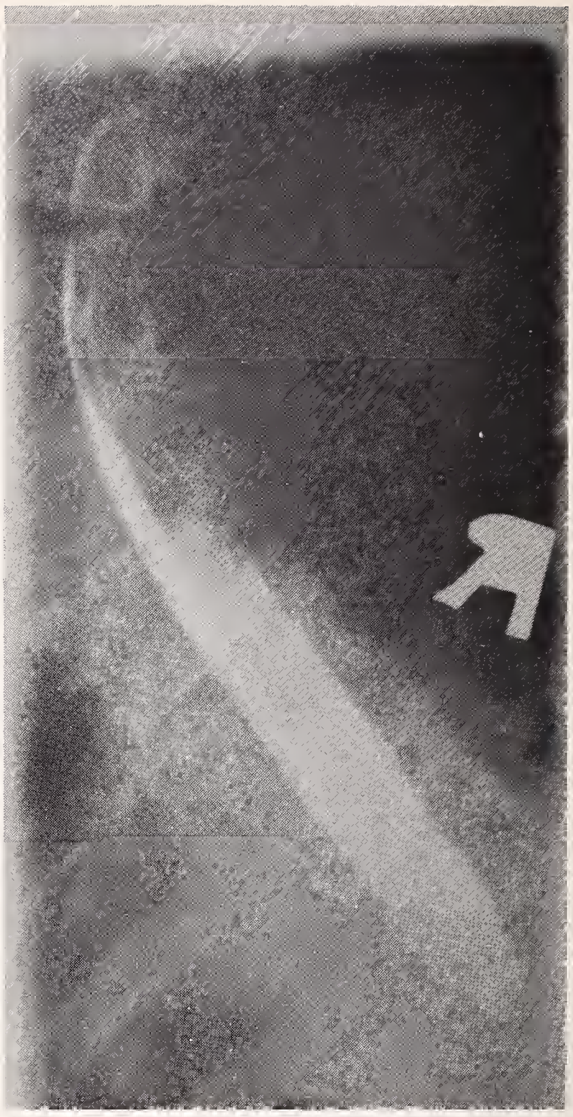

FIGURE I

Second Case

V.P., a white female, was first seen at the New Haven Hospital at the age of 12 in 1959. She had suffered poliomyelitis in infancy with severe weakness of the trunk and upper extremities and a paralytic scoliosis. She had no weakness in her legs. At age fourteen, while being followed for her polio, she began to complain of weakness of the legs, frequent falling, and several episodes of incontinance of urine and feces. She was admitted to the hospital and a myelogram was performed. There was some slowing of the dye column as it traveled around the apex of her dorsal curve but no block was present. (Fig. I). She was, therefore, placed in a body cast and put to bed rest for four months. At the end of this period, her paraplegia was worsening and on November 20, 1961, a laminectomy T1-T7 and postero-lateral fusion was performed by Drs. William J. German and Wayne O. Southwick. Despite wide laminectomy and presumed satisfactory decompression of the cord her paraplegia persisted. By this time Harrington instrumentation had become available to us, through Dr. E. J. McDonnell of Johns Hopkins Hospital, Baltimore. It was felt that some benefit might be gained for the patient by obtaining correction of her deformity using Harrington internal fixation. On April 17, 1962, therefore, in the face of persistent severe weakness of the legs and trunk a Harrington instrumentation of the spine was carried out with a 20° correction of the angle of dorsal scoliosis. (Fig. II). The operation was performed by Dr. Edmund J. McDonnell and Dr. Southwick. Return of function was noted within a month; within six months she was able to walk without assistance. Improvement has continued until May, 1964, by which time the patient had virtually normal strength in all muscle groups of both legs, with normal reflexes. She continues to lead the normal life of a schoolgirl, except for the limitations of her residual upper extremity weakness from poliomyelitis.

Comment

This care illustrated the inexorable progression of paraplegia despite a trial of conservative treatment. It also speaks for the potential usefulness of rigid metallic internal fixation in cases of this type. By affording immediate fixation and a means of correcting resistant and severe deformity hitherto impossible by external means, the Harrington rod technique may represent a useful surgical adjunct to the management of these problems.

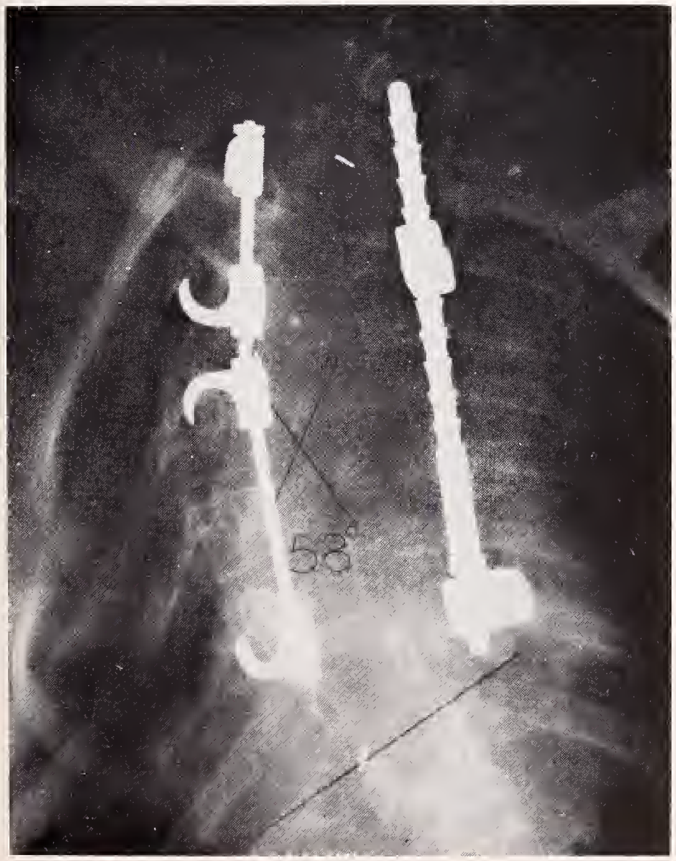

Figure II

Summary

The occurrence of spastic paraplegia complicating scoliosis is uncommon in the absence of infection, tumor or syringomyelia. When neurologial symptoms appear progression to paraplegia may be expected. If myelography demonstrates a block, or if rapid improvement does not occur in the absence of a block on a regime of bed rest and immobilization, surgical treatment in the form of joint neurosurgical and orthopaedic attack is indicated. The neurosurgeon should aim for maximum mechanical relief for the cord by laminectomy, root resections and transposition. The orthopaedic surgeon can then insure permanence of the neurosurgical gains by decreasing the deformity and stabilizing the spine. In the presence of severe and rigid kyphoscoliosis internal correction and fixation of the deformity by means of Harrington rods may provide a means of successful orthopaedic management hitherto unavilable.

Addendum

In recent weeks a third case of this type has been jointly treated by the neurosurgical and orthopaedic sections. This patient had a rather minimal kyphoscoliosis in the mid-dorsal level in conjunction with peridural scarring from previous surgery. He had however a rather sudden and profound degree of spastic paraplegia and was treated by wide laminectomy, decompression of the spinal cord and simultaneous Harrington rod instrumentation and fusion. It is still too early to foresee his result.

It was thought these case reports would serve as a fitting tribute to Dr. William J. German, Professor of Neurosurgery, who created the environment in which all surgeons (regardless of potentially competitive specialties) willingly combine their efforts for the best care of the patient.

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Myelogram: A Questionable Aid In Diagnosis And Prognosis In Avulsion Of Brachial Plexus Components By Traction Injuries

Maurice Héon, M.D.

In the diagnosis, prognosis and treatment of brachial plexus injuries, some problems command the use of all possible tools to clarify the situation. Unless one knows exactly what part of brachial plexus is involved and most of all the exact site of the lesion, ill-timed and ill-placed procedure can only lead to disappointment. Clinical clues can give a hint as to the site of injury; for instance, in the upper type of brachial plexus lesion, paralysis of long thoracic nerve indicates that the lesion is between its emergence near the column and the spinal cord itself. In the same manner, a Horner's Syndrome will also point, in an injury of lower brachial plexus, to its closeness to the cervical canal. In those instances however, there is no way to determine clinically whether the roots are avulsed or elongated at their origin at the spinal cord or outside the spinal canal.

Myelogram was introduced to help solve this problem on the following basis: the arachnoid covers a nerve root to the foramen as will dura which becomes the epineurium as the root goes out. Avulsion at this level may produce a tear in the arachnoid and dura and the ultimate formation of a sort of traumatic meningocele. This term was used by Francis Murphy[1] in one of the first papers given of the subject in 1947 when he reported on one case in which a cervical myelogram demonstrated this type of traumatic meningocele. He concluded there would probably be no return of function in the territory of the involved root. Tarlov[2] reported three other cases in 1954 and J. C. White[3] the same year discussed the problem of a case which prompted him to review the charts of his patients that presented brachial plexus injuries. He thus found two other similar instances where myelogram had revealed the anomalies under discussion. In all those papers, I have not seen the myelographic pictures I was lucky enough to observe in the first of my cases.

A ten year old boy, R.L., consulted because of a paralysis of deltoid, triceps, biceps and infraspinatus muscles, anesthesia in C5, 6 and 7 roots territory following a traction injury of the left upper extremity. Here is the myelogram (Fig. I) that showed the Pantopaque getting out at the origin of the C6 root; it showed the upper trunk, then the first part of subdivision. Other traumatic meningoceles are also seen at C4-C5 level and C7-T1.

In 1957, M.T., a seven year old boy was seen because of complete paralysis of left upper extremity of one month duration before consultation. At the time of our examination, he showed paralysis of deltoid, biceps, triceps muscles and sensory deficit in C6 dermatome. Cervical myelogram showed a traumatic meningocele at the origin of the 7th root on the left (Fig. II): Three years later, the boy presented a good recovery and could even play hockey.

Another 16 year old patient, M.B., was seen in 1958 because of residual motor and sensory deficit in the distribution of C5, 6, 7, 8 and T1 roots on the left. There was no Horner's syndrome; all muscles except the deltoid were totally paralyzed. The myelogram showed a traumatic meningocele only at the origin of the 8th root which, in this case, does not explain all the signs. (Fig. III).

Discussion

By that time my early conviction that the traumatic meningocele of the cervical region meant almost certainly an avulsion of the corresponding nerve root was shaken. The second case argued strongly against Doctor White's[3] idea that: "the exact evidence of presence and extent of spinal root avulsion can be obtained by myelography." Tarlov himself admitted that in one instance at operation, he found some remaining rootlets at the site of the meningocele visualized by myelography.

This doubt was confirmed by the myelogram of a nurse complaining of neck stiffness and mild radicular pain. There was no history of trauma, and examination in relation to the structures of that region was normal. The myelogram showed a meningeal diverticulum similar to that of a traumatic meningocele.

It became evident that the myelographic suggestion of a traumatic meningocele did not infer the avulsion of the corresponding nerve root. A recent case stressed that fact in a more precise fashion.

A 48 year old man was admitted at the Hotel-Dieu in January 1963. Added to numerous injuries and fractures, a complete paralysis of left upper

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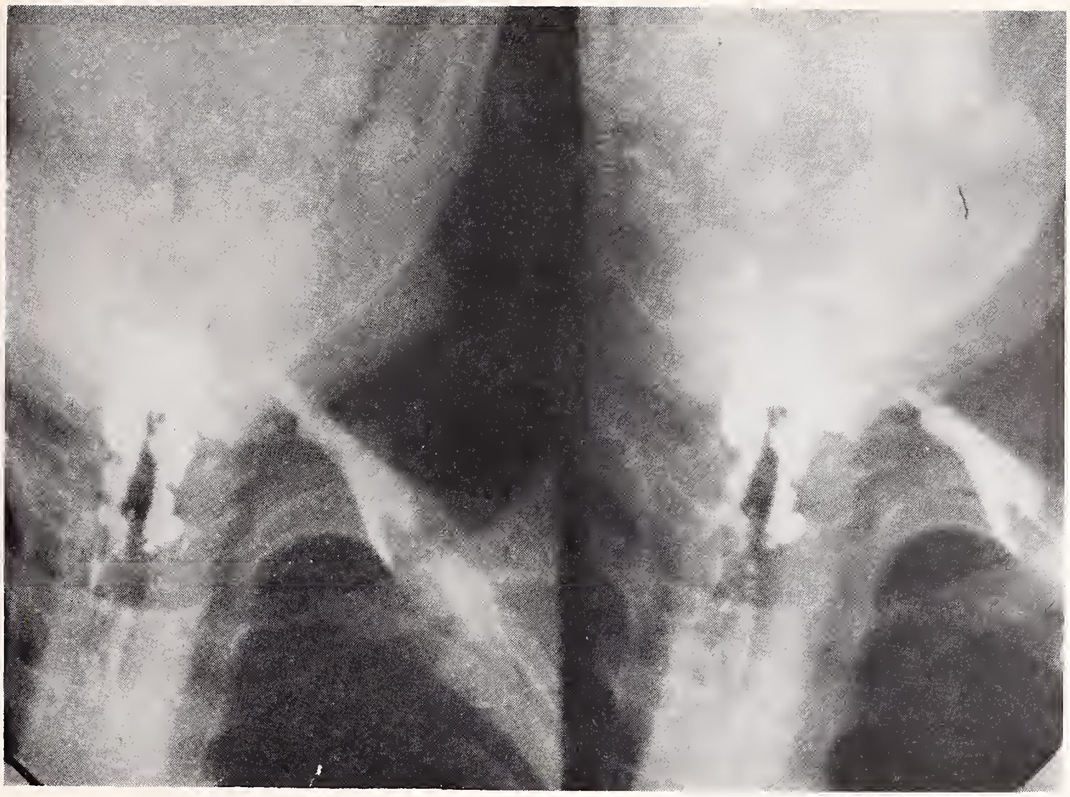

FIGURE I (*reprinted from Canadian Journal of Surgery 3,* 1960, 112)

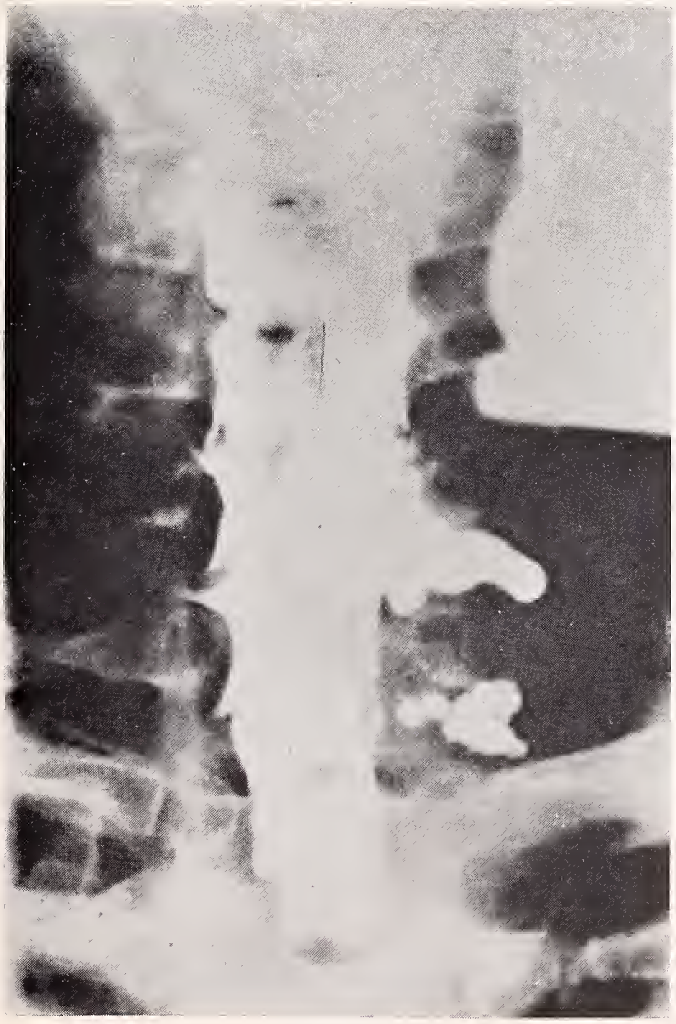

FIGURE II

extremity was noted. Some ten days later, he started to flex the fingers and the wrist. A myelogram (Fig. II) revealed the presence of diverticula of C8 and T1 roots sleeves. It was elected to determine if something could be done, and a hemilaminectomy was performed to expose the meningeal defect. The dura was opened and revealed the dural tear (Fig. III) through which the root goes out: all the radicular filaments were anatomically intact. Stimulation of one volt in the most distal part of that root that could be reached outside the tear, produced the flexion movements observed prior to operation. Stimulation of the other two roots revealed approximately the same movements but to a lesser degree. In the epidural space, a membrane encapsulated

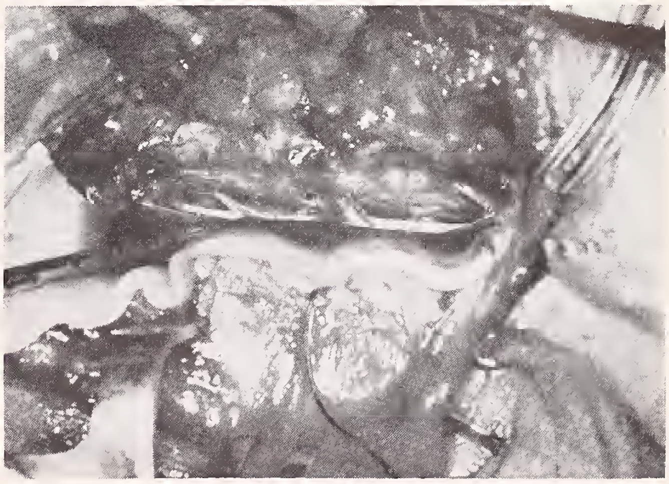

FIGURE III

what remained of the root sleeves and it was decided not to open it so as not to cause a spinal fluid fistula.

Conclusion

A cervical myelogram remains a good test in the course of investigation of brachial plexus injury as to the probable site of injury, but contrary to what had been thought by a few observers, the traumatic meningocele it demonstrates does not parallel the root damage or the nerve injury in the plexus itself. As had been expressed in a paper published in the Canadian Journal of Surgery,[4] dura, being tougher and devoid of elastic fibers, could be torn while the root of different histological structure could resist the same type of injury. My most recent case seems to support this hypothesis.

Barnes[5] after analysing 63 cases of closed injuries of brachial plexus said this: "It is impossible by clinical examination to determine the prospects of recovery in degenerative lesions of nerve root." He opposed the earlier surgical reconstruction of the supposedly denervated extremity and held that this type of treatment should not be performed earlier than 15 months from the date of the accident. Contrary to what I had thought at first, the myeligraphic study of the problem is not going to shorten this period of observation preceding reconstructive surgery.

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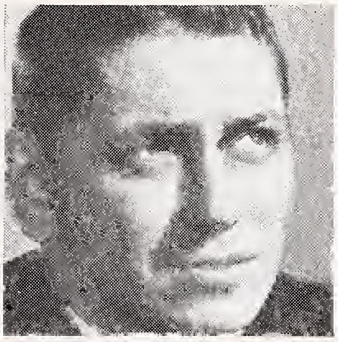
5. Barnes, R.: Traction injuries of the brachial plexus in adult. J. Bone and Joint Surgery, 31B: 10-15, 1949.

Members of the Connecticut State Medical Society reading papers before other organizations are requested to submit their papers to the JOURNAL for consideration by the Board of Editors for publication. Please send them to:

CONNECTICUT MEDICINE
160 St. Ronan Street,
New Haven 11, Connecticut

A. M. Saslow—New Haven-Waterbury

E. J. Hale—Hartford



R. H. Sivertsen—Stanford

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173rd ANNUAL MEETING

of the

CONNECTICUT STATE MEDICAL SOCIETY

Statler-Hilton Hotel

10 Ford Street, Hartford, Connecticut

April 27, 28, 29, 1965

PROGRAM COMMITTEE

Peter J. Scafarello

Peter J. Scafarello, *Hartford, Chairman*

Paul F. McAlenney, Jr., *New Haven*

Rudolf E. Klare, *Woodstock*

MESSAGE FROM THE PRESIDENT

As regularly as comes spring each year comes also the annual sessions of the Connecticut State Medical Society. So, welcome to the 173rd Annual Meeting. Again the meetings are being held in the convenient and congenial atmosphere of the Statler-Hilton Hotel—a factor which has helped to make the recent sessions more successful and widely attended.

The Committee on Program of the Scientific Assembly—aided greatly by the General Manager and his staff—have worked diligently to provide a program that will be rewarding to all who come. The technical exhibits also warrant your interest and support. Not the least of the benefits is the opportunity to renew old acquaintances and "talk shop" with friends at luncheon and between meetings.

So come all who can and plan to stay for both days if possible. I am sure it will be worth the time you give to it.

Ralph L. Gilman

GENERAL INFORMATION

Read Carefully

REGISTRATION:

The registration desk will be located on the mezzanine floor and everyone attending the meeting is requested to register. There will be no charge for registration and all members of the Society will be given a guest luncheon ticket when and only if they register.

PARKING:

There are ample parking facilities at the hotel and in the surrounding area. If you wish, you may drive up to the door of the hotel and an attendant will park your car for you.

TELEPHONE:

Telephone messages will be received at Hartford 249-5611.

LUNCHEONS:

Luncheons will be served in the City Rooms on the Mezzanine on April 28 and 29 and ALL MEMBERS OF THE SOCIETY REGISTERING WILL BE THE GUESTS OF THE SOCIETY. PLEASE REMEMBER, A LUNCHEON TICKET WILL BE GIVEN TO MEMBERS ONLY IF THEY REGISTER.

HOTEL ACCOMMODATIONS:

Persons who wish to remain overnight should make reservations not later than two weeks prior to opening date of the meeting. Reservations will be held until 6:00 P.M. on the day of arrival unless later hour is specified. Please indicate in your letter that you are attending the Connecticut State Medical Society Meeting. Your letter should be directed to the Front Office Manager, Statler-Hilton Hotel, 10 Ford Street, Hartford 3, Connecticut. Special reservation cards are available in the Society office and will be mailed to members upon request.

ANNUAL DINNER:

The Annual Dinner will be held at the hotel on Wednesday, April 28, 1965. The social hour will be at 6:15 P.M. and the dinner at 7:00 P.M. All persons attending the dinner will be the guests of the Society at the social hour which will begin *promptly* at 6:15 P.M. and end *promptly* at 7:00 P.M. Your reservation for dinner should be sent in as soon as possible.

PROGRAM:

General scientific sessions will be held in the terrace room from 9:30 A.M. to 3:30 P.M. Section meetings will begin at 3:30 P.M. and will be held in the rooms listed in the program.

EXHIBITS:

The technical exhibits will be located in the ballroom. Physicians should take advantage of the opportunity to review "under one roof" what is new and timely in the goods and services available to the Connecticut physician.

PROGRAM

Tuesday, April 27

MEZZANINE

Annual Meeting of the House of Delegates

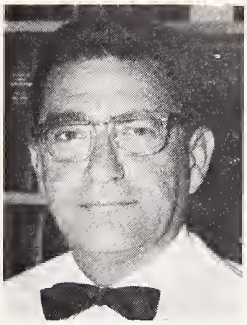
KENNETH F. BRANDON, *Hartford, Speaker of the House, presiding*

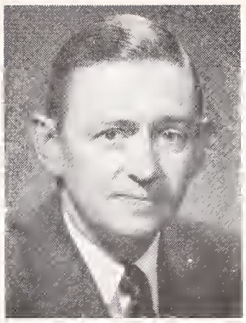
10:00 CALL TO ORDER
BUSINESS SESSION

1:00 LUNCHEON FOR OFFICERS, MEMBERS OF THE HOUSE AND GUESTS

2:00 RESUMPTION OF BUSINESS
Social hour immediately following the adjournment of the meeting.

Clark D. West
Cincinnati, Ohio


David Gitlin
Pittsburgh, Pa.


Harry M. Rose
New York City

Wednesday, April 28

9:00 Registration—Mezzanine

Terrace Room

9:30 Call to Order—James R. Cullen, *Hartford, President of the Society*
Address of Welcome—Charles Polivy, *Hartford, President, Hartford County Medical Association*

Paul F. McAlenney, Jr., *New Haven, presiding*

9:45 The Role of Immunology in Infection
Clark D. West, *Cincinnati; Professor of Pediatrics, University of Cincinnati College of Medicine; Attending Pediatrician, Children's Hospital*

10:30 Gamma-Globulins and Their Relation to Infection
David Gitlin, *Pittsburgh; Professor of Pediatrics, University of Pittsburgh School of Medicine; Senior Staff of Children's Hospital of Pittsburgh*

11:10 Intermission to Visit Technical Exhibits

11:40 Prophylaxis and Treatment of Viral Infections
Harry M. Rose, *New York City; Borne Professor and Chairman, Department of Microbiology, Columbia University College of Physicians and Surgeons; Attending Microbiologist and Associate Attending Physician, Columbia-Presbyterian Medical Center*

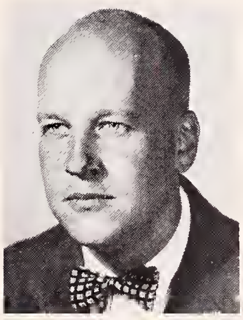
12:20 Recent Advances and Perspectives in Therapy of Acute Leukemia
Joseph H. Burchenal, *New York City; Vice President, Sloan-Kettering Institute for Cancer Research; Associate Medical Director for Clinical Investigation, Memorial Hospital for Cancer and Allied Diseases*

1:00 Luncheon—City Rooms
Intermission to Visit Technical Exhibits

Rudolf E. Klare, *Woodstock, presiding*

2:00 Oral Lesions of Interest to the Physician
Surindar N. Bhaskar, *D.D.S., Ph.D., Washington, D. C.; Chief, Department of Dental and Oral Pathology, U. S. Army Institute of Dental Research, Walter Reed Army Medical Center; Associate Professor, Georgetown University Dental School*

2:40 Glomectomy for Asthma
Richard H. Overholt, *Boston; Clinical Professor of Surgery, Tufts University School of Medicine; Director, Overholt Thoracic Clinic*


Joseph H. Burchenal
New York City

Surindar N. Bhaskar
Washington, D. C.

Richard H. Overholt
Boston, Massachusetts

Wednesday, April 28

MEETINGS OF SECTIONS OF THE SOCIETY AND GUEST ORGANIZATIONS

WOMAN'S AUXILIARY TO THE CONNECTICUT STATE MEDICAL SOCIETY

21st Annual Meeting — Hotel America, Hartford

President: Mrs. Charles M. Krinsky, *New London*
Recording Secretary: Mrs. Harry Levine, *Fairfield*
Corresponding Secretary: Mrs. Hilliard Spitz, *New London*

10:00 Registration

10:30 Business Meeting

1:00 Luncheon

Guest Speaker

Wilfred Bloomberg, m.d., *Commissioner of Mental Health for Connecticut "Planning Project"*

SECTION ON ALLERGY

3:30 Room 412

President: Eugene H. Walzer, *Bridgeport*
Secretary: A. Arthur Fierberg, *Hartford*

Familial Paroxysmal Polyserositis "Periodic Disease"

Sheppard Siegal, *New York City; Associate Attending (Allergy), Mount Sinai Hospital, New York*

SECTION ON DERMATOLOGY

3:30 Room 424

President: Frank M. Castiglione, *New Haven*
Secretary: Patrick N. Brown, *Meriden*

Pruritus—Its Psychology, Diagnosis and Treatment

Maurice M. Tolman, *Boston; Clinical Professor Dermatology, Harvard Medical School; Senior Attending Dermatologist, Massachusetts General Hospital; Consultant Dermatologist, U. S. Veterans Hospital, Jamaica, Massachusetts*

JOINT MEETING

SECTION ON GASTROENTEROLOGY

President: Howard M. Spiro, *New Haven*
Secretary: Saul S. Milles, *Hamden*

SECTION ON INTERNAL MEDICINE

President: Herbert D. Lewis, *New Haven*
Secretary: Robert Molloy, *Hartford*

3:30 Room 416-420

Milk, Bread and Diarrhea—A Study of Intolerance to Sugar and Wheat

Fred Kern, *Denver, Colorado; Associate Professor of Medicine, University of Colorado Medical School; Chief of Gastroenterologic Section*

Panel Discussion

Wednesday, April 28

JOINT MEETING

SECTION ON OBSTETRICS AND GYNECOLOGY

President: Frederick W. Goodrich, Jr., *New London*
Secretary: James M. Bunce, *Hartford*

HEZEKIAH BEARDSLEY PEDIATRIC CLUB

President: Stuart L. Joslin, *Fairfield*
Secretary: Winfield T. Moyer *Manchester*

AMERICAN ACADEMY OF PEDIATRICS–CONNECTICUT CHAPTER

President: Arnold H. Becker, *Bristol*
Secretary: William R. Kueffner, *Southport*

3:30 City Rooms

Panel Discussion: Problems of Perinatal Morbidity and Mortality

Moderator: Stuart L. Joslin, *Fairfield*

Panel: Robert E. Cooke, *Baltimore, Maryland; Professor of Pediatrics, Johns Hopkins Hospital*

Schuyler G. Kohl, *Brooklyn, New York; Professor of Obstetrics and Gynecology, State University of New York, Downstate Medical Center*

General Discussion

SECTION ON PATHOLOGY

3:30 Room 436

President: David J. Nelligan, *New London*
Secretary: Richard D. Otis, *Hartford*

Rubella and the Rubella Syndrome—New Developments

Dorothy M. Horstmann, *New Haven; Professor of Epidemiology and Pediatrics, Yale University School of Medicine*

SECTION ON UROLOGY

3:30 Room 404

President: Charles S. Mirabile, *Hartford*
Secretary: Robert H. Hepburn, *Hartford*

Problems in Acid Base Balance

W. Page Clason, *Hartford; Director of Out-Patient Department, Hartford Hospital*

Wednesday, April 28

CONNECTICUT DIABETES ASSOCIATION

3:30 Room 440

President: William G. Leeds, *West Hartford*
Secretary: James C. Hart, *New Haven*

Diabetic Neuropathy
Max Ellenberg, *New York City; Associate Attending Physician, Mount Sinai Hospital*

ANNUAL DINNER OF THE SOCIETY

Statler-Hilton Hotel
10 Ford Street
Hartford, Connecticut

Social Hour 6:15 p.m. Dinner 7:00 p.m.

PROGRAM

Introduction of Newly Elected Officers — Stevens J. Martin, *Hartford, Chairman of the Council*

James R. Cullen, *Hartford, President, presiding*

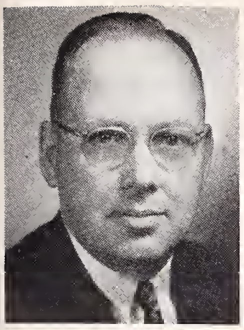
Presentation of Guests and Delegates From State Medical Societies

Fifty Year Membership Awards

Hugh Baird Campbell, Norwich
Jacques Henry Green, North Haven
Frederick Henry Hynes, New Haven
Maxwell Lear, New Haven
Harry L. F. Locke, Hartford
Herbert Thoms, Stony Creek

Guest Speaker

James Z. Appel
President-Elect, American Medical Association


Cornelius E. Sedgwick
Boston, Massachusetts

Howard C. Taylor, Jr.
New York City

Walter W. Sackett, Jr.
Miami, Florida

Mr. Ernest A. Shepherd
Hartford, Connecticut

George Crile, Jr.
Cleveland, Ohio

Thursday, April 29

9:00 Registration—Mezzanine

Terrace Room

Peter J. Scafarello, *Hartford, presiding*

9:45 Inflammatory Diseases of the Bowel Including Regional Ileitis and Chronic Ulcerative Colitis

Cornelius E. Sedgwick, *Boston; Surgeon, Lahey Clinic Foundation; Surgeon, New England Deaconess Hospital*

10:30 Differential Diagnosis of Pelvic Pain

Howard C. Taylor, Jr., *New York City; Professor and Chairman, Department of Obstetrics and Gynecology, Columbia University College of Physicians and Surgeons; Director, Obstetrical and Gynecological Service, Presbyterian Hospital, New York City*

11:10 Intermission to Visit Technical Exhibits

11:40 Baby Raising, Simplified

Walter Wallace Sackett, Jr., *Miami; Former Instructor of Anatomy and Obstetrics, University of Alabama Medical School; Secretary of Staff, Dade County Hospital, Kendall, Florida*

(Program arranged with Connecticut Chapter—American Academy of General Practice)

12:20 Alcohol and Narcotics Use by Teenagers

Mr. Ernest A. Shepherd, *Hartford; Chief, Alcoholism Division, State Department of Mental Health, Member, Board of Editors, Rutgers Quarterly Journal of Studies on Alcohol*

(Program arranged with Association of Medical Examiners of Connecticut)

1:00 Luncheon—City Rooms

Intermission to Visit Technical Exhibits

PROGRAM ARRANGED WITH THE CONNECTICUT SOCIETY OF AMERICAN BOARD SURGEONS

President: Donald R. Morrison, *Hartford*
Secretary: William T. Livingston, *New Britain*
Program Chairman: Woodrow W. Lindenmuth,, *New Haven*

2:00-3:30 Controversial Aspects of Thyroid and Breast Cancer with Case Reports

George Crile, Jr., *Cleveland; Head of Department of General Surgery, Cleveland Clinic*

4:45 Social Hour—Terrace Room

5:45 Dinner
Guest Speakers: Dr. and Mrs. George Crile
Subject: The Phenomenon of Imprintation

Thursday, April 29

MEETINGS OF SECTIONS OF THE SOCIETY AND GUEST ORGANIZATIONS

SECTION ON ANESTHESIA

3:30 Room 424

President: John E. Keet, *Waterbury*
Secretary: James B. Given, *Hartford*
Program Chairman: Harold F. Scully, *Hartford*

VENTILATION PERFUSION RATIOS—THEIR MEANING AND CLINICAL SIGNIFICANCE

HENDRIK H. BENDIXEN, *Boston; Associate Anesthesiologist and Director of Respiratory Unit, Massachusetts General Hospital*

SECTION ON NEUROSURGERY

3:30 Boston Room

President: Irving J. Sherman, *Bridgeport*
Secretary: Franklin Robinson, *New Haven*

NEWER ASPECTS OF THE ETIOLOGY AND TREATMENT OF TRIGEMINAL NEURALGIA

JOSEPH J. RANSOHOFF, *New York City; Professor of Neurosurgery, New York University School of Medicine*

SECTION ON OPHTHALMOLOGY

3:30 416-420

President: Arthur C. Unsworth, *Hartford*
Secretary: David W. Parke, *Meriden*
Program Chairman: Dewey Katz, *Hartford*

3:30 GONIOSCOPY AS A DIAGNOSTIC ESSENTIAL (A CLINICAL EXPOSE IN 3 D)

DAVID D. DONALDSON, *Boston; Professor of Ophthamology, Harvard Medical School*

4:30 BUSINESS MEETING

(The remainder of the program will be a combined meeting of the Sections on Ophthalmology and Otorhinolaryngology)

6:15 RECEPTION—Rooms 436-440

7:15 DINNER

8:30 THE INCREASING UTILIZATION OF PARAMEDICAL GROUPS IN THE FIELDS OF OPHTHALMOLOGY AND OTORHINOLARYNGOLOGY IN THE STATE PROGRAMS

HAROLD LIPTON, *West Hartford; Physician, Crippled Children's Section, Connecticut State Department of Health*

9:00 AN OPHTHALMOLOGIST ABOARD THE S. S. HOPE

PAUL W. TISHER, *New Britain*

Thursday, April 29

SECTION ON ORTHOPEDICS

4:00

Hunt Memorial Building
230 Scarborough Street, Hartford

President: Walter L. Butterfield, *Hartford*
Secretary: Charles T. Flynn, Jr., *Meriden*

The Cup as a Salvage Procedure

Otto Aufranc, *Boston; Assistant Professor of Orthopedic Surgery, Harvard Medical School; Chief of Fracture Service, Massachusetts General Hospital*

SECTION ON OTORHINOLARYNGOLOGY

3:30 Room 440

President: Howard W. Smith, *New Haven*
Secretary: Raoul H. Renaud, *Bridgeport*

The Management of the Laryngeal Emergencies

Paul H. Hollinger, *Chicago; Professor, Department of Otorhinolaryngology, University of Illinois College of Medicine*

Following this program, there will be a combined meeting of the Sections on Ophthalmology and Otorhinolaryngology. See program of Section on Ophthalmology for details.

SECTION ON PHYSICAL MEDICINE

3:30 Room 412

President: Robcliff V. Jones, Jr., *New Haven*
Secretary: Sanford W. Harvey, *Middletown*
Program Chairman: Carl V. Granger, *New Haven*

Bed Sores—Prevention, Management and Treatment

Michael Carpendale, *Edmonton, Alberta, Canada; Professor and Director of the School of Rehabilitation Medicine at the University of Alberta; Director of the Department of Physical Medicine and Rehabilitation at the University of Alberta Hospital*

SECTION ON PROCTOLOGY

3:30 Room 404

President: Bernard J. Kaplan, *Hartford*
Secretary: Sanford Savin, *Bridgeport*

Anorectal Infections (Abscess and Fistula)

Samuel W. Eisenberg, *Philadelphia; Clinical Professor of Proctology, Temple University Medical Center; Attending Proctologist, Lower Bucks County Hospital, Bristol, Pennsylvania*

CONNECTICUT DISTRICT BRANCH – AMERICAN PSYCHIATRIC ASSOCIATION

3:30 Room 408

President: Benjamin Wiesel, *Hartford*
Secretary: John H. Houck, *Hartford*

The Program of the New Haven Mental Health Center

Frederick C. Redlich, *New Haven; Professor and Chairman, Department of Psychiatry, Yale University School of Medicine*

Gerald Klerman, *New Haven; Director of Clinical Services, Connecticut Mental Health Center*

Thursday, April 29

SECTION ON RADIOLOGY

3:30 New York-Washington Rooms

President: Arnold H. Janzen, *Hartford*
Secretary: Orlando F. Gabriele, *New Haven*

Chronic Lung Disease
Robert G. Fraser, *Montreal, Canada; Radiologist, Royal Victoria Hospital*

ASSOCIATION OF MEDICAL EXAMINERS OF CONNECTICUT

President: Samuel B. Rentsch, *Derby*
Secretary: Francis P. A. Williams, *Monroe*

1:00 Luncheon for Medical Examiners and Guests—Rooms 416-420

3:30 Business Meeting—Room 436

CONNECTICUT RHEUMATISM ASSOCIATION

3:30 Buffalo Room

President: Harold J. Lehmus, *Manchester*
Secretary: Harold S. Barrett, *Hartford*

Business Meeting

SPECIAL NOTICE
TUFTS UNIVERSITY SCHOOL OF MEDICINE
DEAN'S RECEPTION

Tuesday, April 27, 1965 – 5:30-7:30 p.m.

Terrace Room Statler Hilton Hotel, Hartford

TUFTS ALUMNI WELCOME

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Space	*Firm*	*Location*
1	Group Insurers, Inc.	New Haven, Conn.
2	Mead Johnson Laboratories	Evansville, Ind.
3	Warner-Chilcott Laboratories	Morris Plains, N.J.
4	Parke, Davis & Company	Detroit, Mich.
5	Arthur W. Eade Insurance Agency	Hamden, Conn.
6	Surgeons' & Physicians' Supply	Boston, Mass.
7	Westwood Pharmaceuticals	Buffalo, N.Y.
8	Dome Chemicals, Inc.	New York, N.Y.
9	G. D. Searle & Company	Chicago, Ill.
10	Mutual Benefit Life Insurance Co.	Hartford, Conn.
11	Brewer & Company, Inc.	Worcester, Mass.
12	Professional Equipment Company	New Haven, Conn.
13	Organon, Inc.	West Orange, N.J.
14	Americana Corporation	Medford, Mass.
15	Sandoz Pharmaceuticals	E. Hanover, N.J.
16	Burroughs Wellcome & Co. (U.S.A.) Inc.	Tuckahoe, New York
17	Eli Lilly & Company	Indianapolis, Ind.
18	Ciba Pharmaceutical Company	Summit, N.J.
19	Ferranti-Dege, Inc.	Cambridge, Mass.
20	Connecticut Medical Political Action Committee (COMPAC)	
21	Syntex Laboratories	Palo Alto, Calif.
22	E. R. Squibb & Sons	New York, N.Y.
23	Duke Laboratories, Inc.	South Norwalk, Conn.
24	Merck, Sharp & Dohme	West Point, Pa.
25	Conn. Chronic & Convalescent Hospital Assoc.	Milford, Conn.
26 27	American Medical Association Department of Medicine & Religion	Chicago, Ill.
28	Connecticut State Department of Health	Hartford, Conn.
29	Great Books of The Western World	Chicago, Ill.
30	The Upjohn Company	Kalamazoo, Mich.
31 32 33	Connecticut Heart Association and Connecticut State Department of Health	
34	Central Surgical Supply Co., Inc.	Ansonia, Conn.
35	Siemens Medical of America, Inc.	Hinsdale, Ill.
36	U.S. Vitamin & Pharmaceutical Corp.	New York, New York
37	Ortho Pharmaceutical Corp.	Raritan, N.J.
38	Encyclopaedia Britannica	Chicago, Ill.
39 40	Connecticut Dairy and Food Council, Inc.	Hartford, Conn.
41	Thermo-Fax Sales, Inc.	West Hartford, Conn.
42	Brookes Research Associates	Hanover, N.J.
43	QT-New Haven, Incorporated	
44	International Health Chairs, Inc.	Trenton, N.J.
45	Controlled Air Products, Inc.	Greens Farms, Conn.
46	Photoeaze Manufacturing, Inc.	New York, N.Y.
47	D. G. Stoughton Company	West Hartford, Conn.
48	Lederle Laboratories	Pearl River, N.Y.
49	Roche Laboratories	Nutley, N.J.

ANNUAL COUNTY ASSOCIATION MEETINGS

New Haven, Thursday, March 18

Waverly Inn, Cheshire

Business Meeting: 3:30 p.m.
Dinner: 7:00 p.m.
Speaker: Dean George A. Garratt of the Yale University School of Forestry.
Subject: THERAPY OF THE OUTDOORS.

New London, Thursday, April 1

Norwich Inn, Norwich

Business Meeting: 8:00 p.m.
Social Hour: 5:30 p.m.
Dinner: 6:30 p.m.

Hartford, Wednesday, April 7

Tumblebrook Country Club, Bloomfield

Business Meeting: 5:00 p.m.
Cocktails: 6:45 p.m.
Dinner: 7:00 p.m.
Speaker: Dr. Nichalos Nyaradi, Director, School of International Studies, Bradley University.
Subject: THE AMERICAN DILEMMA.

Middlesex, Thursday, April 8

Holiday Inn, Meriden

Business Meeting: 4:30 p.m.
Social Hour: 7:00 p.m.
Speaker and subject to be announced.
Dinner: 7:30 p.m.

Fairfield, Tuesday, April 13

Stratfield Motor Inn, Bridgeport

Business Meeting: 4:30 p.m.
Social Hour and Dinner to follow.
There will be no speaker.

Litchfield, Tuesday, April 13

White Hart Inn, Salisbury

Business Meeting: 5:00 p.m.
Cocktails: 6:00 p.m.
Dinner: 7:00 p.m.

Windham, Thursday, April 15

Vernon Stiles Inn, Thompson

Business Meeting: 5:00 p.m.
Social Hour and Dinner to follow business meeting.
Speaker: Charles Smith
Subject: OLYMPIC SWIMMING.

Tolland, Tuesday, April 20

Old Homestead Inn, Somers
6:30 p.m.

Cocktails and Dinner to be followed by Business Meeting.
Speaker: Oliver J. Purnell
Subject: EMERGENCY TREATMENT OF BURNS.

Stelazine® brand of trifluoperazine

will calm your anxious working patient—with little or no drowsiness

When anxiety interferes with work, your patient needs a drug that will calm without causing undue drowsiness. With Stelazine (trifluoperazine, SK&F), you can promptly control the anxiety without producing the sedation seen with certain other agents. Anxious patients can remain active during therapy.

Stoll[1] used the drug in 50 patients with anxiety, and noted: "There was no drowsiness in this group of patients and, because of their alertness and less impaired concentration, they were able to continue with and, in some cases, return to their daily work."

Stelazine (trifluoperazine, SK&F) produces a fast therapeutic response—often within 24 to 48 hours. The convenient b.i.d. regimen frees patients from the need for a midday dose.

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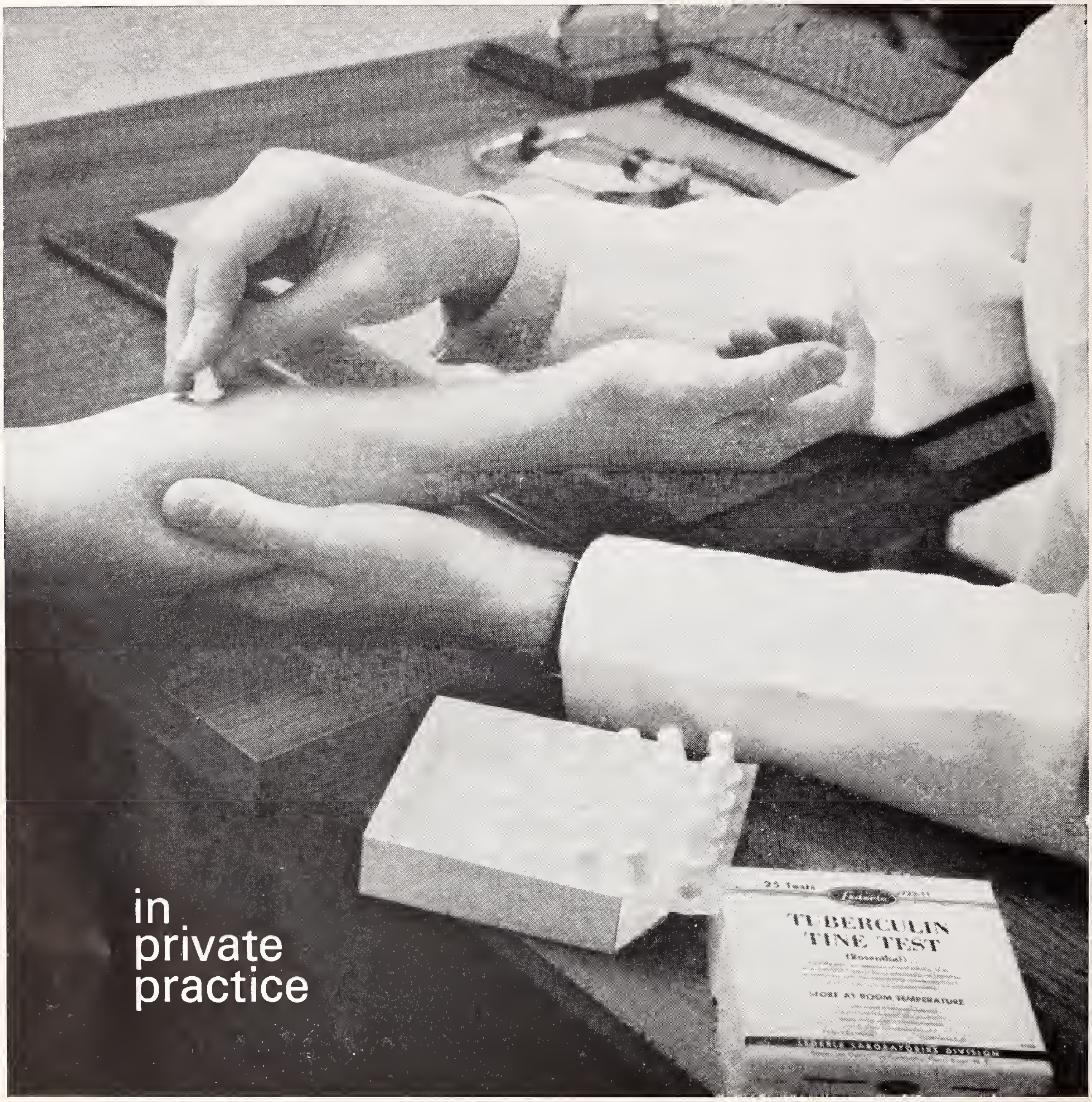
Before prescribing, see SK&F Product Prescribing Information.

Photograph professionally posed.

1. Stoll, L. J.: The Use of Trifluoperazine ['Stelazine'] in General Practice, M. Press *243*:578 (June 29) 1960.

Smith Kline & French Laboratories, Philadelphia



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Side effects are possible but very rare: vesiculation, ulceration or necrosis at test site. Contraindications, none; but use with caution in active tuberculosis. *Available* as the new individually-capped unit, boxes of 5, or in cartons of 25.

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FROM THE GENERAL MANAGER'S OFFICE

William R. Richards, m.d., *General Manager*
160 St. Ronan Street, New Haven, Conn.
Telephone 865 0587

James G. Burch
Director of Public Relations

Josephine P. Lindquist
Assistant to General Manager

CALL

ANNUAL MEETING OF THE HOUSE OF DELEGATES

The 1965 Annual Meeting of the House of Delegates will be held at the Statler-Hilton Hotel, Hartford, commencing at 10:00 o'clock in the morning of Tuesday, April 27

Following luncheon, the House will reconvene for the completion of business.

Ralph L. Gilman, President
Kenneth F. Brandon, Speaker of the House
Denis S. O'Connor, Secretary

INTRODUCTION OF RESOLUTIONS

Article V, Section 12, Par. 3 of the Bylaws of the Society Provides that:

All resolutions to be considered as regular business at any regular meeting of the House of Delegates must be in the hands of the Speaker not later than seventy-two hours before the opening of that meeting. All resolutions and recommendations published in the official agenda distributed to the members of the House prior to the meeting at which action is to be taken shall be considered as regular business. Resolutions presented later than seventy-two hours before the opening of a meeting will be referred for consideration as regular business by the House only when they are presented by the Council or accepted for consideration by majority vote of the delegates present. Any resolution which does not qualify in accordance with the aforesaid provisions for consideration as regular business may be accepted for action by a majority vote of the delegates present and, if so accepted, shall be referred at once by the Speaker to a reference committee. Any such reference committee shall consider resolutions referred to it and shall report, with recommendations to the House before adjournment of the meeting.

PROPOSED AMENDMENT TO THE BYLAWS

The following proposed amendment to the Bylaws was presented to the House of Delegates on December 9, 1964 and was tabled for consideration and action at the next regular meeting of the House of Delegates.

In accordance with the Bylaws, this amendment will be published in Connecticut Medicine, "on one or more occasions prior to the next meeting . . . at which meeting the amendment shall be taken off the table and acted upon by the House of Delegates."

INTRODUCED BY THE COUNCIL:

Article X, Section 3, Paragraph 1, to be amended as follows:

Par. 1. *Outline.* Separate "Delegates to State Medical Societies and Special Societies" to read "Delegates to State Medical Societies" and "Delegates to Special Societies."

Par. 13. (amend to read) *Delegates to State Medical Societies.* The Council shall elect annually two delegates each to the following state medical societies: Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont. The delegates elected shall be members of the Council or have been members of the Council at some time during the four years preceding their election. The terms of office of all such delegates shall be for one year, beginning July 1. The duties of these delegates shall be to attend meetings of the state medical societies to which they are assigned, to act as official representatives of The Society at such meetings, and to file informative reports with the Council on the proceedings of such meetings.

Par. 14. (add new paragraph) *Delegates to Special Societies.* The Council shall elect annually one delegate each to the Connecticut Hospital Association, the Connecticut Pharmaceutical Association, the Connecticut State Dental Association and the Connecticut State Nurses Association. The terms of these delegates shall be for one year, beginning at the annual meeting of The Society. Delegates to the named special societies shall either be officers of The Society or committee chairmen or members who are knowledgeable of the work of the special society to which they are delegates. The duties of these delegates shall be to attend meetings of the special societies, to act as official representatives of The Society at such meetings, and to file informative reports with the Council on the proceedings of such meetings.

Renumber present paragraphs 14 and 15 to become paragraphs 15 and 16.

SUMMARY OF COUNCIL ACTIONS

Thursday, February 18, 1965

I. Attendance

Present in addition to the Chairman, Dr. S. J. Martin, were: Drs. Cullen, Hess, O'Connor, Goldberg, Brandon, Davis, Weise, Sr., Gardner, M. Caplan, Bradley, Grendon, Egan, H. Caplan, Phillips, Hughes Shepard, Ayres, Rogol, Ciccarelli, Seigle, Fabro, Epstein, and W. Martin. Also present were: Mrs. Lindquist, Mr. Burch, Dr. O. W. Stringfield, Mr. Chilcoat (AMA) and Dr. Richards. Absent were: Drs. Gilman, Pitock, Abbot, Spitz, Hastings and Major.

II. Routine Business

Life Membership

It was VOTED to approve applications for Life Membership of the following eligible Active Members:

Robert S. Buol, New Britain (HCMA)
Newell W. Giles, Stamford (FCMA)
Benedict R. Harris, New Haven (NHCMA)
Anthony F. Massa, New Haven (NHCMA)
Welles A. Standish, Hartford (HCMA)
Harry W. Stetson, Milford (NHCMA)

Annual Dues—Conference Of Presidents

It was VOTED to authorize payment of 1965 annual dues, in the amount of $75.00 to the Conference of Presidents and Other Officers of State Medical Associations. The Conference holds opinion forums in association with the annual meetings of the AMA House of Delegates.

Date Of Next Meeting

The next meeting will be held on Wednesday, March 24, 1965.

III. Old, New And Special Business

Communication—Welfare Department Policy Re Hospital Discharge

In reply to a letter from the General Manager, Dr. Edwin R. Connors, Medical Director of the State Welfare Department, furnished the Council with a written explanation of the Department's new policy concerning making recommendations for the discharge of welfare beneficiaries from general hospitals in the State. Having reviewed Dr. Connors' explanation of the policy, it was VOTED to inform Commissioner Shapiro that the Council still finds several objectionable aspects to the policy, even as interpreted by the Medical Director, and urges that a meeting be held in the near future for the purpose of discussing these areas of objection and attempting to resolve them in a mutually satisfactory manner. It was further VOTED to appoint a committee to hold these discussions with the Commissioner, such committee to be composed of the Advisory Committee to the Commissioners of Welfare, Finance and Control; Ellwood C. Weise, Sr., Chairman of the Ad Hoc Committee on MAA (Kerr-Mills); and (from the Council) Armanno W. Ciccarelli, Stewart P. Seigle and Henry Caplan. Peter J. Scafarello, Chairman of the Advisory Committee to the Commissioners of Welfare, Finance and Control, will be asked to chair the full committee and to arrange with Mr. Shapiro the time and place for the meeting.

Recommendation—Committee On Public Health

It was VOTED to adopt a recommendation of the Committee on Public Health that the Council approve and implement the following:

"Because of the activities of non-medical agencies, and in consideration of the medical responsibility for health matters, the Committee recommends (that the Council recommend) to the Commissioner of Health the strengthening and clarification of the Public Health Code (19-13, D15 and D16) concerning child day care centers and a requirement for registration of such centers by the State Department of Health."

Review Of CSMS Section Bylaws Re Membership Requirements

The General Manager reported that Mrs. Lindquist and he had reviewed all section bylaws on file at the office, and had concluded that in no instance did these bylaws require contingent membership in an organization other than the Society. On this basis, it was VOTED to recommend to a group of general practitioners who have applied for authorization to form a Section on General Practice that they delete a provision in the proposed bylaws which calls for contingent membership in the Connecticut Academy of General Practice.

However, since the review did reveal that several sections (Internal Medicine, Orthopedics, and Radiology) do, or tend to, limit membership to those who are certified by recognized boards or are eligible for certification, it was VOTED to refer to the Subcommittee to Study and Revise the Bylaws (for study and report) the question of incorporating in the CSMS bylaws the prescribed eligibility requirements for membership in a section of the Soicety.

Report—Committee On Third Party Payments

It was VOTED to accept a report of the Committee on Third Party Payments, titled: "Revisions of Welfare Payment Schedules," and it was further VOTED to direct the Chairman to appoint a special committee composed of representatives of the 15 general practitioners who initiated the study; of the Committee on Third Party Payments; of the Advisory Committee to the Commissioners of Welfare, Finance and Control; and of the Council, and to designate the chairman thereof, such committee to arrange a meeting with the Commissioners concerned for the purpose of implementing the recommendations of the report.

It was further VOTED to commend the Committee on Third Party Payments for its work in preparing the report referred to above.

Report—AMA National Conference On Kerr-Mills

It was VOTED to accept a report on this National Conference (Chicago, January 9-10) filed by Ralph L. Gilman, President, and Isadore H. Friedberg, Chairman of the Committee on State Legislation. Drs. Gilman and Friedberg attended the Conference as representatives of the Society. Copies of the report will be distributed to members of the Committees on National and State Legislation, and of the Advisory Committee to the Commissioners of Welfare, Finance and Control.

AMA-CSMS Educational Program On National Health Legislation

Much of the time of this meeting was given over to a discussion of the national legislative situation in regard to so-called "medicare" and the AMA's recently announced educational campaign to gain support for the proposal it endorses—Eldercare (HR-3727). Having received the report of Drs. Gilman and Friedberg on the AMA Conference on Kerr-Mills (Chicago, January 9-10), the reports of the AMA Delegates and others on the special convention of the AMA House of Delegates (Chicago, February 6-7), remarks by Mr. Chilcoat (AMA Field Representative), and a report of the CSMS Public Relations Division, the Council took actions designed to continue opposition to "medicare (King-Anderson Bill) and to enlist public support for Eldercare as follows:

(a) Without dissent it was VOTED to appropriate the sum of $6,627.50 from general funds, which, with a matching amount to be received from AMA, will furnish an operating budget for the CSMS educational program of about $13,000.

(b) It was VOTED to approve the report and recommendations of the PR Division, outlining the mechanisms by which it is proposed to conduct the public and professional education program on the superiority of Eldercare over "medicare.."

c) It was VOTED to circularize the membership of the Society regarding the Council's actions to conduct this educational program, to inform members that voluntary contributions will be welcome to augment the funds appropriated, and to utilize this direct mailing to apprise members of several pamphlets which are available and urge them to order supplies of the pamphlets to place in their waiting rooms and to distribute in other ways.

(d) It was VOTED to direct the Chairman to appoint a committee of Council members and others, including the General Manager, to consider and study alternative methods of action to be recommended to the members of the Connecticut State Medical Society in the event of passage by Congress of the King-Anderson Bill or similar "medicare" legislation, and to report on this study to the Council at its next meeting.

AMA Recommendation Re Billing For PAC Dues

It was VOTED to table action on an AMA-approved resolution (Miami, Nov.-Dec., 1964) which recommends that state medical societies send out voluntary dues statements for state political education committees with their regular membership dues billings, and to defer consideration of this matter until a legal opinion has been obtained thereon from the Society's attorneys.

Report—Relative Value Study Committee

Stewart P. Seigle, Chairman of the RVS Committee, filed a definitive report for the Committee which recommended: (a) that the Society adopt *in toto* the 1964 Revision of the California Relative Value Schedule; (b) that such adoption include the California nomenclature, with minor change in terminology and values for several items in the section on Internal Medicine; (c) that the schedule be reviewed at the end of one year; and (d) that the preceding recommendations be transmitted to the House of Delegates for approval. It was VOTED to accept the report and recommendation of the RVS Committee, and to transmit same to the House of Delegates at the 1965 Annual Meeting. It was further VOTED to furnish copies of the report to the members of the Committee on Third Party Payments, and to request that Committee to make recommendations to the next meeting of the

Council (March) concerning the use to be made of the RV Schedule (if adopted by the House of Delegates) by the Society, by its members and by other organizations.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on February 18, 1965. Detailed minutes of the meeting are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

PLACEMENT WANTED

ORTHOPEDIC SURGEON – Board diplomate, 31 years of age, wishes to establish himself in Connecticut in a group or associate practice. Is presently chief resident in University hospital service.

PHYSICIAN trained in Physical Medicine and Rehabilitation, Board eligible, licensed in Connecticut, wishes to practice either with an associate or in an institution.

OPHTHALMOLOGIST – Board certified, Harvard Medical School, university trained, having completed military obligation now seeks partnership or association with another ophthalmologist.

INTERNIST—would like to go into an association or group practice. Connecticut license, Board eligible, will shortly complete military obligation.

GENERAL SURGEON—Board eligible, university trained, 31 years of age. Wishes either group or partnership practice.

PLACEMENT OPPORTUNITIES

EXPANDING medical group has an opening for a general practitioner or an internist interested in group practice. Call or write Chapel Medical Group, 1308 Chapel Street, New Haven, Connecticut.

SENIOR PHYSICIAN for the Medical Service of the Connecticut Valley Hospital. Must have Connecticut license. Salary range $11,640 to $15,080—but could start above the minimum if properly qualified. Housing and other fringe benefits. Contact Superintendent, Connecticut Valley Hospital, Middletown, Connecticut, 347-5651.

PRACTICE FOR SALE—six room office, semi-attached with four bedroom house. Long established practice in southwest Connecticut. Ideal for G.P. or Internist.

PUBLIC HEALTH PHYSICIAN—Opening for community health department; generalized clinical and administrative duties; entry position to field of public health. Liberal benefits. No age or sex requirements. Connecticut license or eligibility for license required. Apply directly to Dr. Norton G. Chaucer, Director of Public Health, 56 Coventry Street, Hartford, Conn. Salary open.

CONNECTICUT licensed M.D. as Full Time House Officer for 5-day week in an expanding accredited hospital. Salary $12,000 per year. Please reply to : The Park City Hospital, P. O. Box 638, Bridgeport, Connecticut 06601.

ANYONE INTERESTED IN THE ABOVE IS ASKED TO COMMUNICATE WITH THE GENERAL MANAGER'S OFFICE, 160 ST. RONAN STREET, NEW HAVEN, CONNECTICUT 96511.

1965 MEETINGS

March 18—New Haven County Medical Association Annual Meeting held at the Waverly Inn, Cheshire, Connecticut at 3:30 P.M.

April 1—New Haven County Medical Association Annual Meeting held at Norwich Inn, Norwich, Connecticut at 5:30 P.M.

April 7—Hartford County Medical Association Annual Meeting held at Tumblebrook Country Club, Bloomfield, Connecticut at 5:00 P.M.

April 8—Middlesex County Medical Association Annual Meeting held at Holiday Inn, Meriden, Connecticut at 4:30 P.M.

April 13—Fairfield County Medical Association Annual Meeting held at Stratfield Motor Inn, Bridgeport, Connecticut at 4:30 P.M.

April 13—Litchfield County Medical Association Annual Meeting held at White Hart Inn, Salisbury, Connecticut at 5:00 P.M.

April 15—Windham County Medical Association Annual Meeting held at Vernon Stiles Inn, Thompson, Connecticut at 5:00 P.M.

April 19—The Newington Veterans Administration Hospital announces a symposium, "The Conduct of Psychotherapy" to be held in the auditorium of the Veterans Administration Hospital. Speakers will be Jules Coleman, M.D., Professor of Public Health, Yale Medical School and Louis B. Fierman, M.D., Chief, Psychiatric Service, West Haven Veterans Administration Hospital. Donald Shapiro, M.D., Chief,Mental Hygiene Clinic of the Newington Veterans Administration Hospital will serve as moderator.

April 20—Tolland County Medical Association Annual Meeting held at Old Homestead Inn, Somers, Connecticut at 6:30 P.M.

April 27-29—173rd Annual Meeting of the Connecticut State Medical Society to be held at Statler-Hilton Hotel, Hartford, Connecticut.

June 9—Annual Meeting of the Connecticut Society of American Board Internists to be held at site to be selected in the future.

September 24—40th Clinical Congress to be held in Mary S. Harkness Auditorium at the Yale University School of Medicine, New Haven. The program will be devoted to "Advances in the Treatment of Infection" and "Advances in the Treatment of Shock."

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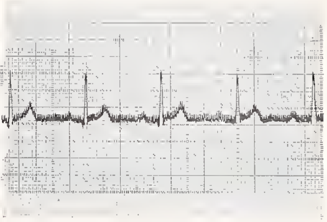

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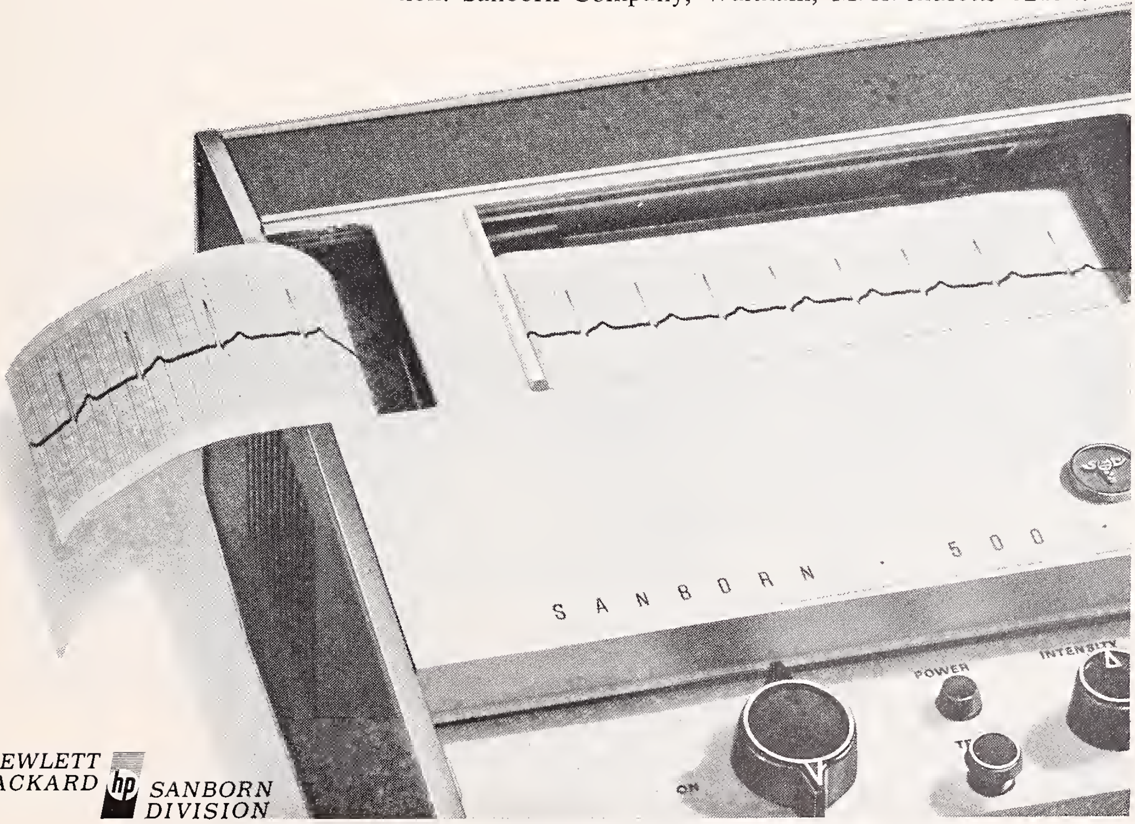

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OBITUARIES

William Emil Wrang, M.D.
1895 - 1965

Dr. William Emil Wrang, a prominent Middletown physician for many years died suddenly while attending a sports function in Boston, Mass., on January 29, 1965. Dr. Wrang was born in Middletown on March 9, 1895, and attended local schools, graduating from Middletown High School in 1914. He took his pre-medical training at Niagara University and entered Jefferson Medical College, graduating in 1919. After interning at St. Francis Hospital in Hartford, he entered practice in Middletown in 1920, devoting himself to general practice and to surgery.

Dr. Wrang held staff appointments in surgery and gynecology at Middlesex Memorial Hospital until he reached the mandatory retirement age of 65. From the earliest days of his practice he was actively interested in the development and improvement of the hospital. His lifelong active interest in sports introduced him to many prominent figures in the athletic world, and it was through his efforts that some of them contributed to the providing of operating room facilities at the Middlesex Memorial Hospital.

Dr. Wrang was a member of St. John's Church of Middletown, the Lambs Club of New York, and the New York Athletic Club. He served a term on the Middletown City Council and one on the Middletown Board of Education. For many years he was Surgeon to the Middletown Police and Fire Departments, and recently was Deputy Medical Examiner for the area.

He was devoted to his family, and enjoyed the respect of the community and the love of his patients. Several years ago he was chosen Middletown Man of the Year by one of the local service clubs. He will be missed as a beloved father, a devoted physician, and a valuable and respected citizen.

Louis O. La Bella, M.D.

James J. Cognetta, M.D.
1910 - 1964

Dr. James John Cognetta was born in Stamford, Connecticut, July 28, 1910. He was graduated from Stamford High School in 1928, the University of Vermont in 1932, and received his medical degree from the University of Vermont Medical School in 1936. He interned at the Stamford Hospital and began the practice of medicine in his native city in 1937.

Dr. Cognetta was a devoted general practitioner throughout his medical career. He took a personal interest in his patients and their families, and was beloved by all of them. To him, the demands of his profession, no matter how exacting, were of paramount importance and to be met at any cost.

He was on the associate staff of the Stamford Hospital and an associate member of the surgical staff of St. Joseph's Hospital in Stamford. He was a member of the Stamford Medical Society, the Fairfield County Medical Association, and the Connecticut State Medical Society. He also maintained membership in the A.M.A. and in the Stamford chapter of the Connecticut Academy of General Practice.

He died August 7, 1964 in St. Joseph's Hospital of arteriosclerotic heart disease with acute myocardial infarction.

Dr. Cognetta married Juliette Desautels in 1934. Besides his widow, he is survived by his mother, Mrs. Marietta Cognetta, three sisters and a brother, Armond B. Cognetta, M.D., of Danville, Illinois. He leaves also two sons, four daugthers, and two grand-children.

Frank H. D'Andrea, m.d.

Joseph L. Carwin, M.D.

1904 - 1964

Dr. Carwin was born on November 12, 1904, in Macon, Georgia. He received his A.B. degree from Morehouse College, Atlanta, Georgia in 1927, and his M.D. degree from Maharry Medical College, Nashville, Tenn. in 1932. Following graduation he interned at Freemen's Hospital in Washington, D.C. He then spent a few months practicing with his father in St. Louis, Mo.

Joseph L. Carwin, M.D., a general practitioner of medicine in Stamford, Conn., died at his home, 45 Richmond Drive, Old Greenwich, Conn., June 30, 1964, at the age of 59 years.

Dr. Carwin was licensed to practice medicine in Georgia in 1932, and in Connecticut, January 24, 1934. He started the practice of medicine in Bridgeport and after one year moved to West Main Street, Stamford, Conn., in 1935. In November of 1935 he married Dr. Joyce Yerwood, of Austin, Texas, whom he had met and courted while at the Maharry Medical School. They had one son, Joseph L. Carwin, Jr.

The many honors and opportunities for service bespeak of his ability and the diversified field of attainments. He was elected a member of the Fairfield County Medical Association, the Connecticut State Medical Society, the Stamford Medical Society (1937), and a member of the National Medical Association. At the time of his death he was President of the Stamford Chapter of the American Academy of General Practice, a member of the regular medical staff at The Stamford Hospital, associate attending staff in medicine at St. Joseph's Hospital, and on the courtesy staff at the Greenwich Hospital.

In 1956, he was elected President of the Stamford Medical Society. He was a member of the Board of Trustees of the Fairfield County Medical Association for several years and in 1961-1962, he served as President of this organization. He served several terms as a member of the House of Delegates of the Connecticut State Medical Society. In 1960, Dr. Carwin and his wife, Dr. Joyce Yerwood, visited Russia, Hungary, Poland and Czechoslovakia as members of a delegation from the National Medical Association.

Community activities were close to his heart. He was most influential in the establishment of the West Main Street Community Center in Stamford and served for many years as President of its Board of Directors. He was a member of the Rotary Club, very active on the various United Fund Drives, and was a member of the Board of Directors of the Y.M.C.A. at the time of his death.

Yes, Joe was quite a GUY. He was the first member of his race to be chosen President of the Fairfield County Medical Association. Thinking of the physicians' role in our human affairs he wrote in one of his presidential letters: "In this, the Thanksgiving season, we give thanks to Him who has ordained the seasons of the year and the seasons of our lives. We give thanks that in our book of birth, He placed a caduceus beside our names. We give thanks that He has made us strong enough to watch the ache of life with equanimity and the loneliness of death with sympathy and compassion."

He was loved and respected by everyone who knew him because of his Honesty, Genial Personality, Gentlemanly Demeanor, and Generosity of his multiple services to his fellowman. Above all, however, he was truly one of God's servants, and he served Him well.

Oliver L. Stringfield, m.d.

Defense Asks 851 Physicians In Summer '65

The Selective Service System has received a requisition from the Department of Defense for 851 physicians to be brought to active duty during the coming summer.

Each service is participating in the call.

In announcing the requisition, the Department of Defense said that the call is necessitated by the fact that a sufficient number of 1964 medical school graduates did not volunteer for active duty immediately following internship. The majority of physicians involved will serve as General Duty Medical Officers.

The requirements of the services which are to be met by this call are as follows:

Army, 550; Navy, 176; Air Force, 125.

The need for specialists in the Armed Forces Medical Services is filled by volunteers who have been deferred for specialty training under the Berry Plan and by physicians who are completing their military residencies.

The last Selective Service call for physicians was effective in the summer of 1964.

In the past, physicians calls in some cases have been modified upward or downward after issuance.

Health Education And Information Services

The allocation of $2,035,000 in federal funds for the construction of hospitals and medical care facilities was approved recently by the Connecticut Public Health Council, according to Franklin M. Foote, M.D., State Commissioner of Health. These funds were allocated to Connecticut hospitals and medical care facilities on recommendation of the State Planning Council on Hospital Care and Construction, under the Hill-Harris Act formerly known as the Hill-Burton Program. The monies allocated represent about 9 per cent of $22,000,000 worth of hospital and medical care facilities planned in the state.

Among general hospitals, Bristol Hospital will receive $300,000; New Britain Hospital, $300,000; Danbury Hospital, $166,666; Day-Kimball Hospital in Putnam, $70,812; Grace-New Haven Hospital, $131,508; Griffin Hospital in Derby, $179,840; and Stamford Hospital, $179,840.

A public health center planned by the City of New Haven will receive $160,000.

The Matulaitis Nursing Home in Putnam will receive a $200,000 grant for 110 beds under the long-term care facilities portion of the program.

For diagnostic and treatment services Uncas-on-Thames Hospital in Norwich will receive $125,000; Park City Hospital in Bridgeport, $103,000; and Waterbury Hospital, $50,000.

In Memoriam

Gibson, Cole B.—Meriden; Atlanta Medical College, 1914. Dr. Gibson was a national authority on diseases of the chest and discovered that tuberculosis is not inherited. He studied the origin of tuberculosis for about 20 years before determining it was contracted by an unaffected child or person from a person who had the disease in an active form. His discovery became universally accepted. Dr. Gibson was superintendent of Undercliff Hospital for 37 years. He saw the development of the hospital from a collection of wooden buildings to the first brick building and then to the construction of a modern fire-proof building. Through Dr. Gibson's efforts, Undercliff was able to extend its services to adults, as well as children. Upon retiring from Undercliff, Dr. Gibson was named director of the Bradley Home for the Aged, a post which he held until his death. He was a past president and member of the New Haven County Medical Association and the Connecticut State Medical Society. He was also a member of the American Medical Association. Dr. Gibson was active in many aspects of Meriden's civic, business, and professional life. A few of his many activities included secretary of the Board of Directors of Meriden Hospital; corporator and retired first vice president of Meriden Savings Bank; member of the advisory board, Connecticut Bank and Trust Company; corporator of City Savings Bank; past president and member of the Rotary Club; 32nd degree Mason; past president and charter member of Bulls and Bears Bowling Club; and member and medical director of Sphinx Temple Shrine, Hartford. Dr. Gibson died February 26, at the age of 73.

James, George R.—Hamden; Yale School of Medicine, 1910. Dr. James practiced medicine in the New Haven area for 30 years. He retired six years ago, after serving as resident physician at Rocky Hill Veteran's Hospital for 20 years. Dr. James was a member of the New Haven County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. James died March 1, at the age of 79.

WOMAN'S AUXILIARY

President
Mrs. Charles M. Krinsky, New London

President-Elect
Mrs. William R. Richards, New Haven

First Vice-President
Mrs. James F. Jones, Danielson

Second Vice-President
Mrs. David O'Keefe, Hartford

Recording Secretary
Mrs. Harry Levine, Fairfield

Corresponding Secretary
Mrs. Hilliard Spitz, New London

Treasurer
Mrs. Stephen A. Hulme, West Hartford

Annual Meeting – April 28, 1965

Hotel America, Hartford

The annual meeting of the Woman's Auxiliary to the Connecticut State Medical Society will convene in the Hotel America in Hartford on April 28, 1965 at 10:00 A.M. The business meeting will be followed by a social hour and a luncheon. Doctor, bring your wife with you when you come to attend your meeting and encourage her to meet other doctors' wives and enjoy the day with them.

Annual Meetings Of The County Auxiliaries

FAIRFIELD has not yet set the date and place of its annual meeting.

HARTFORD is holding its annual meeting on April 13 at the Farmington Country Club.

LITCHFIELD is planning its annual meeting for April 21st at the Conley Inn, Torrington.

MIDDLESEX is celebrating its 20th anniversary at the Monte Green Inn on April 7th.

NEW HAVEN celebrates its 20th anniversary on April 7th at the Farms Country Club in Wallingford.

NEW LONDON is planning to have its annual meeting on a day in May not yet determined.

WINDHAM is holding its annual meeting on April 21st.

Annual Meeting Of The Woman's Auxiliary To The A.M.A. June 20-24, 1965

The 1965 Convention of the Woman's Auxiliary to the A.M.A. will be held from June 20 to June 24 at the Hotel Americana in New York City.

Activities for Auxiliary members will begin on Sunday June 20 with a Tea and Fashion Show from 4 to 6 o'clock in honor of the president, Mrs. William H. Evans and president-elect, Mrs. Richard Sutter. At the same time there will be a Teenage Mixer in Albert Hall, lower level of the Americana.

On Monday, June 21st, the formal opening of the convention will take place at 9:00 A.M. A Guest Day Luncheon for leaders of National Women's Volunteer organizations, Auxiliary members and guests will be held in the Trianon Ballroom, Hotel Hilton at 12:30.

On Tuesday the entire morning will be given over to presentation of state reports. The annual luncheon honoring the National Past Presidents will follow the morning program. Dr. Donovan F. Ward, president of the A.M.A. will be guest speaker. The convention will reconvene at 2:30 P.M. for National Committee presentations.

On Wednesday there will be a general meeting from 9:00 A.M. until Noon.

This will be followed by a Postconvention Conference for Presidents and Presidents-elect, on Thursday from 9:00 to Noon.

April 15 is the deadline date for making reservations at the Americana Hotel.

SET THE EXAMPLE –
USE SEAT BELTS!

AROUND THE STATE

New Haven County

Dr. Luigi Mastroianni, Jr., has been named chairman of the Department of Obstetrics and Gynecology of the University of Pennsylvania's School of Medicine. The appointment was announced by Dr. Gaylord P. Harnwell, president of the university.

Born in New Haven, Dr. Mastroianni received a bachelor's degree from Yale University and an M.D. degree from the Boston University School of Medicine.

He took his internship and residency in obstetrics and gynecology at Metropolitan Hospital, New York City, and later held a research fellowship at Harvard Medical School and Free Hospital for Women. He was an instructor (1955-56) and assistant professor (1956-61) in obstetrics and gynecology at the Yale University School of Medicine. He left Yale in 1961 to assume a post at UCLA.

New Haven County Medical Association Board Of Governors

The last meeting of our Board of Governors under its present direction was held at the Colonial House on February 25, 1965. The meeting was largely attended in spite of vacationing members of the Board.

The report by Councilor Henry Caplan was attended with the usual interest, and particularly, his report of the Third Party Payments to the Council. They feel a more realistic alignment of needs and fee schedules should be made, so that rates for night calls start at 7:00 P.M. rather than 10:00 P.M. General Practitioners' fees should be raised. Reduced, or sub-standard payment to doctors for "welfare" cases on federal, state and local levels should not reduce those patients in stature by a system of second class fees for second class citizens.

Bernard Burnham, of the State Legislative Committee, reported a change in blood testing for alcoholism is being contemplated which will involve the use of technicians and not doctors. Dr. Foote has suggested special prescription forms, in triplicate, to be used in writing for narcotics. These remarks received special attention by the members of our Board.

A comprehensive program for meeting contemplated Congressional legislation on Health Care of the Aged will call for the services of every physician in the County. The difference between "Medicare" (King-Anderson) and "Eldercare" (A.M.A. endorsed) must be brought home to the public through talks to church groups, clubs, societies and letters to legislators urged to be written.

Of special moment was the motion to inscribe, in our records, a rising vote of thanks to Kurt Pelz for his long term as Chairman of our Board of Censors made successful by his patience, tact and diplomatic handling of sometimes delicate problems which his committee has been called upon to handle.

Respectfully submitted,
H. A. Levin, M.D.
Clerk

News From Yale University School Of Medicine

Construction has begun on a $1,050,000 addition to the Hunter Building at the Yale-New Haven Medical Center to provide expanded facilities for patient care in pediatrics and for training in clinical research.

Plans call for three floors to be added to the present three-story Radiation Therapy Center on Davenport Avenue, with the construction costs to be paid by a grant from the Federal Government under the Health Facilities Construction Act and by gifts from private donors.

The largest single grant is $365,500, from the National Institutes of Health. Private gifts to Yale for the project include:

—$250,000 from the Lawrence M. Gelb Foundation of New York City toward construction of the fifth floor (second floor of the addition). This floor will accommodate considerable expansion of patient beds used in conjunction with the existing Clinical Research Center, which is supported by the N.I.H.

Mr. Gelb has two sons who are Yale graduates, Richard Lee Gelb, Class of 1945, and Bruce S. Gelb, Class of 1950.

—$100,000 from The John and Mary R. Markle Foundation of New York toward the sixth floor (third floor of the addition), which will house a new Clinical Research Training Center. Here young physicians will train to become skilled scientific investigators under the guidance of a special faculty.

When you put patients on "special" fat diets..

you can assure them that no corn oil margarine is higher in polyunsaturates or lower in saturates than Mrs. Filbert's Corn Oil Margarine.

And once they've tried it, they can tell you that no margarine can match Mrs. Filbert's flavor.

Mrs. Filbert's Corn Oil Margarine is a special margarine* made from 100% corn oil, over 50% of which retains its liquid characteristics.

Of the total fatty acid content 28% is cis-cis linoleic acid. Ratio of polyunsaturates to saturates is about 1.7 to 1.

For additional information, including detailed listings of component characteristics, please write to us: J.H. Filbert, Inc., Baltimore 29, Maryland.

* AMA Council on Foods and Nutrition: The Regulation of Dietary Fat, *JAMA* 181:411-423 (August 4, 1962).
AMA Council on Foods and Nutrition: Composition of Certain Margarines, *JAMA* 179:719 (March 3, 1962).

—$100,000 from Robert E. Hunter of Santa Barbara, Calif., a graduate of Yale's Sheffield Scientific School in the Class of 1911. Mr. Hunter's earlier gifts made possible the construction of the Radiation Therapy Center. Later gifts, now totaling $100,000, are to be applied to the addition and will enable the Department of Radiology to utilize more space for its cancer research activities.

— $80,000 from the Bill Hahn Foundation of Westbrook, Conn.

— $28,936 from the New Haven Foundation.

The Yale School of Medicine dedicated its $4,200,000 nine-story Laboratory of Epidemiology and Public Health on April 10th. The ceremonies launched a five-day program which included a major scientific session and a conference of the Association of Schools of Public Health.

Dr. Karl Evang, Director-General, Health Services of Norway was the main speaker at the dedicatory exercises.

Six public health authorities spoke during the scientific program on Sunday, April 11, and the Association of Schools of Public Health began a three-day conference at the laboratory on Monday, April 12, with representatives from the United States, Canada and Puerto Rico.

The new structure also houses the world-famous Rockefeller Foundation Virus Laboratories which have been moved from New York City and occupy the sixth, seventh and eighth floors. Philip Johnson of New York City and Douglas Orr of New Haven are the associate architects.

Dr. Vernon W. Lippard, Dean of the Yale School of Medicine, presided at the dedication ceremonies.

Morning sessions of the April 11 scientific program featured talks by Major Scott B. Halstead, Chief of the Virology Department of SEATO Medical Research Laboratory, on "Dengue and Homorrhagic Fevers in Southeast Asia"; Dr Thomas H. Weller, Richard P. Strong Professor of Tropical Public Health at Harvard School of Public Health, on "Rubella"; and Dr. Karl Habel, Medical Director of the National Institute of Allergy and Infectious Diseases, on "Tumor Viruses."

Afternoon speakers and their subjects were:

Dr. Robert W. Miller, Chief of the Epidemiology Branch, National Cancer Institute, on "Environmental Agents in Cancer"; Dr. Brian MacMahon, Chairman of the Department of Epidemiology at Harvard School of Public Health, on "Methodology of Research in the Epidemiology of Cancer"; and Dr. Paul Denson, Deputy Commissioner of New York City's Department of Health, on "The Quality of Medical Care."

News From The Connecticut State Department Of Health

Cases of streptococcal sore throat in Connecticut pushed up to 1,013 during the week ending March 6, up from 713 the previous week, said Franklin M. Foote, M.D., Commissioner, Connecticut State Department of Health. Not since the week ending February 29, 1964, when there were 1,123 cases, have reports reached this level.

Rheumatic fever and rheumatic heart disease were made reportable in February. These diseases are two of the serious, sometimes fatal complications that may follow untreated streptococcal infections. The Public Health Council decided to make rheumatic fever reportable in order that prompt and vigorous control and treatment measures can be undertaken. One person with rheumatic fever was reported in this latest week.

It is known that timely use of antibiotic drugs can control an attack of strep infection so that serious after effects such as rheumatic heart damage do not result.

Reports of measles climbed to 424 from 370; German measles stayed about the same at 49, compared with 44.

Mumps cases remained at 79 as in the previous week, while infectious hepatitis went back up to 11 from 2. Eight new pulmonary tuberculosis reports were recorded, the same as the week before.

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Letters To The Editor

To The Editor:

Just a few weeks ago I answered a *Connecticut Medicine* questionnaire in which I was asked to indicate subjects of interest. Because I am in Life Insurance Medicine, I indicated the desirability of Life Insurance Medicine oriented articles.

Your "Blood Pressure and Life Expectancy," February 1965, is exactly the kind of article I had in mind. I only wish that every physician would read it. It would make the lot of an Insurance Company Medical Director somewhat easier.

I have one comment concerning Dr. Benford's 1,000 consecutive insurance applicants. I am sure you will find that Board Certified Examiners or their equivalent furnish the best examinations for any company. However, the rank and file examiner is at best a busy General Practitioner who does insurance examinations along with everything else in a day's practice. The "Board" examiner is reserved for the special case, the large amount case or the case concerning which there is an argument.

The poorest examiner is the so-called, "professional" examiner who earns a large part of his living by making insurance examinations. On one hand he wishes to keep his company appointment while on the other hand he knows that if too may of his cases are rated or declined, Agents will avoid him.

The blood pressure problem is the greatest stumbling block. For some reason in the hands of certain examiners blood pressures and pulses too are always the same, 120/80 and 72, for example. Or if the initial reading is high, readings on different days tend to be lower and lower.

However, our Blood Pressure Mortality Studies reveal that in any case mortality is reflected more accurately by the highest blood pressure reading and not the lowest or even the average.

Many companies use a modified average when there is great disparity between the highest and lowest readings.

I don't for one minute believe that my suggestion prompted your article but I am glad it appeared. It is being routed to my Medical Directors as something to read.

Cordially yours,

Whitman M. Reynolds, M.D.

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Letters to the Editor are welcome and will be published for informative and educational purposes as space permits. As with other material which is submitted for publication, all letters will be subject to the usual editing. Address all correspondence to: The Editor, Connecticut Medicine, *160 St. Ronan Street, New Haven, Connecticut, 06511.*

To The Editor:

A group of physicians concerned about the broad social and specific medical problems associated with patterns of minority group discrimination have had a series of informal discussion meetings, culminating in the organization of a Medical Committee for Human Rights. Some 40 physicians in the New Haven community have taken part in one or another of these discussions, including five of our colleagues who participated in medical work in Mississippi last summer. Informal relationships are maintained with a national organization whose offices are in New York City. We are currently exploring ways and means of being helpful in efforts to improve the health and welfare of minority groups in the New Haven community, and also in contributing to the efforts to improve conditions in certain of the Southern areas. Close liaison is maintained with community and church groups now active in the New Haven area.

This announcement is by way of informing our medical colleagues of our existence and our planning efforts, and to extend a warm invitation to join in this work to any who might be interested.

Sincerely,

E. C. Severinghaus, m.d.
Secretary, Medical Committee
for Human Rights

65 Trumbull Street
New Haven, Conn.

BOOKS RECEIVED

Books received for review are acknowledged in this department and such acknowledgement must be regarded as a sufficient return for the courtesy of the sender. Selection will be made for review in the interests of our readers and as space permits.

Simple Splinting. The Use of Light Splints and Related Conservative Therapy in Joint Diseases. By Jerome Rotstein, M.D. and forwarded by Jerome S. Tobis, M.D. with a chapter on the History of the Treatment of Arthritis by Laura S. Rotstein, M.A. W. B. Saunders Co., Philadelphia and London, 1965, 126 pp., illustrated. $6.50.

Leopold's Principles And Methods Of Physical Diagnosis. Third Edition. By Henry U. Hopkins, M.D., W. B. Saunders Co., Philadelphia and London, 1965, 503 pp., illustrated. $8.50.

Physiatric Dictionary. Glossary of Physical Medicine and Rehabilitation. By Herman L. Kamenetz, M.D., Charles C. Thomas Publisher, Springfield, Illinois, 1965. 173 pp. $6.75.

Guide For Referral Of Families to Community Health And Social Services. Prepared by the Department of Maternal and Child Health, Harvard School of Public Health, 1965. Harvard School of Public Health, Boston, Massachusetts. $3.15.

Guidebook for Alcoholics. How to Succeed Without Drinking. By Drake Weston, Ph.D., Exposition Press, Inc., New York, 1965. 136 pp. $3.50.

HOW TO cough better

Some cough mixtures claim they stop coughs. Others say they soothe, allay or relieve coughs.

One prescription—Dilaudid Cough Syrup—approaches the ideal: *fewer but better coughs*. It gives a degree of antitussive action needed for the persistent, racking, unproductive cough that ordinary codeine or codeine-like substances cannot match. Also, it liquifies troublesome mucus to make the cough more productive.

You have to prescribe it.

Your patients will be glad you did. They'll be coughing better.

The usual therapeutic dose is one teaspoonful (5 ml.) repeated every three to four hours. The dose for children should be adjusted according to age and body weight. Each 5 ml. of Dilaudid Cough Syrup contains 1 mg. hydromorphone and 100 mg. glyceryl guaiacolate in a pleasant-tasting, peach-flavored vehicle containing 5% alcohol. Subject to Federal Narcotic Regulations.

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Attending physician's instructions will be followed meticulously by trained nurses under our administrator's supervision.

Excellent nursing care is offered for the chronic invalid, the cardiac, the senile, the aged, the post-operative, the diabetic, and the geriatric. Full rehabilitation program including recreational and occupational therapy. Grounds contain individual gardening plots. No restrictions on visiting hours.

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Special Notices

AEROSPACE MEDICAL ASSOCIATION
36th ANNUAL MEETING
April 26-29, 1965
New York Hilton Hotel, New York, N. Y.

On Monday, April 26th, President Theodore C. Bedwell, Jr., will convene the largest Annual Scientific Meeting in the thirty-six year history of the Aerospace Medical Association. More than 2500 of the world's foremost specialists in aerospace and aviation medicine and the allied sciences will attend the many sessions scheduled on the following four-day program.

More than 200 carefully selected scientific papers will be presented by internationally known aerospace physicians, life scientists and specialists, having an intense interest in improving the safety and health of the world's rapidly growing flying population—civil, military and aeronautics.

These outstanding papers will assure a diversity of subjects sufficiently broad in scope and interest that all who attend will find a session in each period of significant interest.

Unusual highlights of the scientific sessions will be four closed-circuit color TV programs on "The Doctor's Role in Air Traffic Control"; "Progress Report on Project Gemini"; "Pilot Physical Examinations"; and "Cardiovascular Problems in Aerospace Medicine."

Four special sessions have been arranged, with outstanding speakers, on subjects of rapidly increasing importance: "Medical Aspects of Supersonic Transport Operations" and "Circadian Rhythms in Aerospace Operations," and two sessions co-sponsored with the Flying Physicians on "Civil Aviation Medicine."

AMERICAN COLLEGE OF PHYSICIANS
Postgraduate Course No. 14
REHABILITATION
May 10-14, 1965
New York University Medical Center

Meeting Place: Institute of Physical Medicine and Rehabilitation, 400 East 34th Street, New York 16, N. Y.
Director: Howard A. Rusk, M.D., F.A.C.P.
Minimal Registration: 25; Maximal Registration: 30.
Fees: A.C.P. Members, $60; Nonmembers, $100.

Note: Registration forms and requests for information are to be directed to: Edward C. Rosenow, Jr., M.D., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pa., 19104.

Summary of Course: This course will include, primarily, problems pertaining to patients who have suffered cerebral vascular accidents with resulting hemiplegia; discussion on the rehabilitation of patients with spinal cord injuries at various levels; care of arthritic and amputation patients and the rehabilitation approach to patients with peripheral neuropathies. In addition, there will be a session each, in geriatrics, electro-diagnosis and electromyography.

Hotel Accommodations: The Statler Hilton, Seventh Avenue, 32nd to 33rd Street, New York, N. Y. 10001; Mr. Anthony L. Rotunno, Sales Representative. Single rooms, $8 to $18; Twin-bedded rooms, $15 to $25.

YALE UNIVERSITY SCHOOL OF MEDICINE
Announcement Of Two Special Lectures
May 3rd and May 18th

"EMOTION AND HEALTH"
By Dr. Paul Tournier
Geneva, Switzerland
Monday, May 3, 1965
5:00 P.M.
Mary S. Harkness Memorial Auditorium
Yale University School of Medicine
333 Cedar Street, New Haven

"MANAGEMENT OF TERMINAL ILLNESS'
By Dr. Cecily Saunders
St. Mary's Hospital, London, England
Tuesday, May 18, 1965
5:00 P.M.
Fitkin Amphitheater
Yale-New Haven Medical Center
789 Howard Avenue, New Haven

These lectures are open to all who may be interested.

YALE UNIVERSITY SCHOOL OF MEDICINE
Wednesday, April 28, 1965 — 5:00 P.M.
Fitkin Amphitheater, Yale-New Haven Medical Center

Announcement of a Special Lecture
"RECENT ADVANCES IN ELECTRONEUROMYOGRAPHY"
by Michael T. F. Carpendale, M.D.
Director, School of Rehabilitation Medicine
University of Alberta
(All interested are invited to attend)

AMERICAN COLLEGE OF PHYSICIANS
Presents
Postgraduate Course No. 15
CURRENT CONCEPTS IN GASTROENTEROLOGY
May 24-26, 1965
Stephen Leacock Building Amphitheatre
McGill University
Montreal, P. Q., Canada

Director
Richard D. McKenna, M.D.C.M., F.A.C.P., F.R.C.P. (C)
Associate Directors
Ivan T. Beck, M.D., Ph.D., F.A.C.P., F.R.C.P. (C)
Douglas G. Kinnear, M.D., F.A.C.P.
Fees: A.C.P. Members, $60; Nonmembers, $100
Minimal Registration, 50; Maximal Registration, 300

NOTE: Please send all registrations, requests for information and application blanks to: Edward C. Rosenow, Jr., M.D., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pennsylvania, 19104.

HARTFORD HOSPITAL
SATURDAY MORNING 11 O'CLOCK GUEST SPEAKERS
April 3 to June 17, 1965

April 3—*C. Davenport Cook, M.D.,* Professor of Pediatrics, Yale.

Subject: 10:00 a.m. "Respiratory Difficulties in the Newborn"

11:00 a.m. "Chronic Respiratory Diseases of Childhood"

April 10—Cardio-Pulmonary Symposium—Hartford Hospital C-P Laboratory

April 17—*Evan Calkins, M.D.,* Professor of Medicine, Buffalo

Subject: "Amyloidosis—Evolving Concepts about an Old Clinical Problem"

April 24—*Robert Slater, M.D.,* Dean, University of Vermont School of Medicine

Subject: "The Evolving Relationship Between Medical Schools and Practicing Physicians"

May 1—*Nilo E. Herrera, M.D.,* Pathologist, Danbury Hospital, Danbury, Conn.

Subject: "The Liver Scan"

May 8—*Herbert M. Sommers, M.D.,* Asst. Prof. of Pathology, Northwestern, Assoc. Pathologist, Chicago Wesley Memorial Hospital

Subject: "Experimental Acute Myocardial Infarction"

May 13-15—*Harry Prystowsky, M.D.,* Prof. and Chairman of Dept. of Ob-Gyn University of Florida (Gainesville).

Subject: "Preventive Medicine in Ob-Gyn"

May 22—Hartford Hospital Research Group—9:00 a.m. to 12:30 p.m.

11:00 a.m. "Myeloma Proteins and Antibodies"—*Dr. Henry Kunkel,* Rockefeller Foundation

May 27-29—*Henry T. Bahnson, M.D.,* Professor of Surgery, Univ. of Pittsburgh

May 27—Operate with Residents

May 28—Newington V.A. Hospital

May 29—"Surgical Postoperative Infections"

June 5—*Philip Tumulty, M.D.,* Professor of Clinical Medicine, Johns Hopkins

Subject: "The Auto-Immune Disorders — Acute and Chronic"

June 11—Connecticut Medical Research—Hunt Memorial—9:00 a.m.—4:00 p.m.

June 12—Thomas N. Hepburn Memorial Lecture:

Richard Chute, M.D., President, American Urological Association

Subject: "The Catheter—Pros and Cons"

June 17—Hartford Hospital House Staff Graduation

AMA Announces Hightlights Of 114th Annual Convention In June

New York City

June 20-24, 1965

The Council on Postgraduate Programs of the American Medical Association announced that the program for the 114th annual convention in New York City June 20-24, 1965, is virtually complete, and that an attendance of between 25,000 and 30,000 physicians is anticipated.

When the AMA held its last convention in New York City in June, 1961, the total physician registration was 23,083.

J. Arnold Bargen, M.D., Temple, Tex., chairman of the Council on Postgraduate Programs, which plans the scientific programs for the AMA's two conventions each year, said that the New York City program will be most comprehensive, including lectures, scientific exhibits, preview showings of medical films and color television.

"The combined efforts of many people, particularly the specialty section secretaries, have helped to formulate a program that will be an outstanding contribution to graduate medical education," Dr. Bargen said.

There will be six general scientific meetings at the New York convention, offering to physicians the most recent findings in adverse drug reactions; organ transplantation; hearing; non-narcotic drug addiction; metabolism in growth development and aging, and diagnostic cytology.

The convention will center in the New York Coliseum at Columbus Circle, adjoining Central Park, which also housed the 1961 annual convention. Even this huge building cannot contain all of the scientific meetings, and some will overflow into hotels in the mid-town area.

The complete program of the convention will be published in the May 10 issue of the Journal of the AMA.

Twenty-three specialty sections also will have programs in addition to the six general scientific meetings, including the newly established Section on Allergy.

"We already have found," said Dr. Bargen, "that thousands of American physicians are planning to combine attendance at the annual convention with a trip to New York City with their families to see the New York World's Fair, which will be in its second year next summer.

"Many physicians have decided that the 1965 meeting offers an excellent opportunity for a combination family vacation and postgraduate study session in New York," he said.

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Doctor's Office

Stuart Falk, M.D., announces the removal of his office for the practice of urology to 3 Woodland Street, Bristol.

Paul R. Fleisher, M.D., announces the opening of an office for the practice of urology at 435 Montauk Avenue, New London.

Frederick Van Poznak, M.D., announces the association of Armand Guigui, M.D., in the practice of general surgery at 230 Danbury Road, Ridgefield.

Julius G. Weiner, M.D., announces the removal of his office to 60 Gillett Street, Hartford.

The Dangerous Benefits Of Modern Drugs

That drugs are capable of inducing harm as well as benefits is beyond cavil. Indeed, potential danger appears inherent in all human advances. One need only cite the loss of life incurred by the automobile, and the Sword of Damocles which nuclear energy has suspended over all living matter. However, in considering the toxicity of drugs one should not lose sight of the contribution of these agents to the relief of suffering and to human welfare. . . . It would be to the disservice of humanity and medicine if we allowed an imbalanced perspective to hamper the advance in drug therapy which has characterized the present century. Full knowledge of the drugs at his disposal rather than restrictive measures controlling their use will enable the physician to derive the great benefit of drugs therapy while maintaining at a minimum the harm inherent in their use.—Arthur Grollman, M.D., in *Texas State J. Med.,* 61: 1, (Jan.) 1965.

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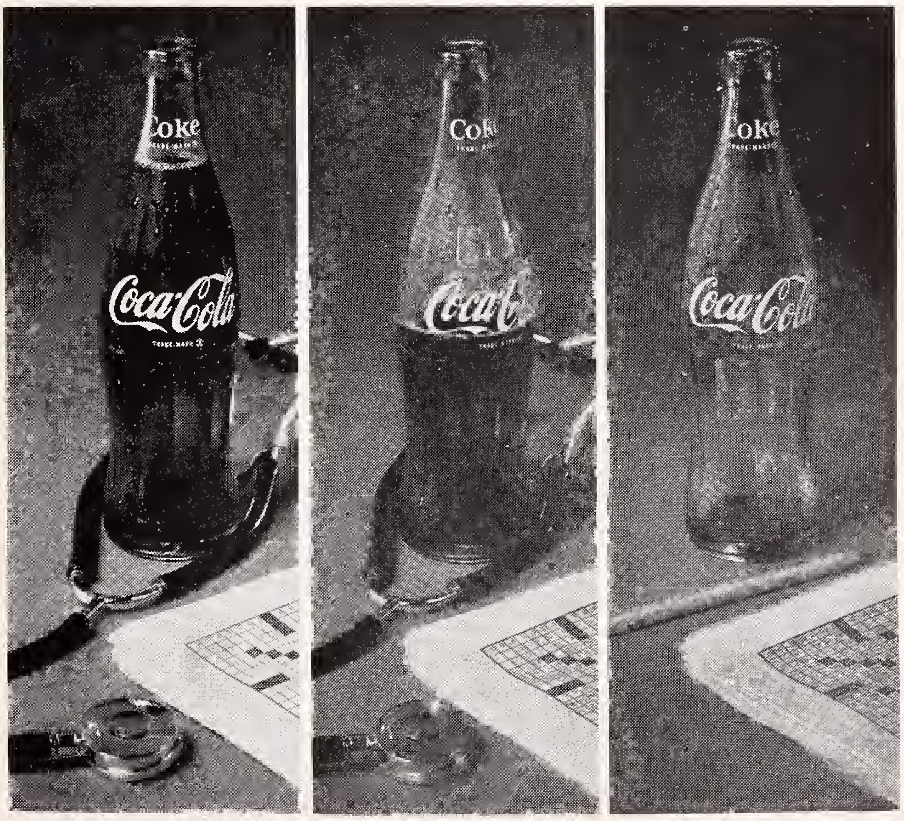

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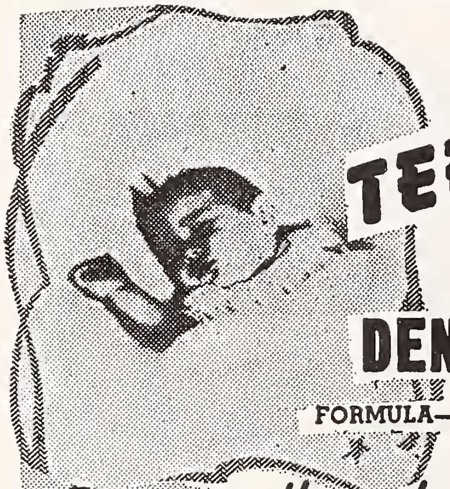

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Easier on the Baby . . .

DENTOCAIN LOTION MILD makes it easier to go through the troublesome teething period. A small amount, applied with gentle massage, brings quick, soothing relief to irritated and inflamed gum tissue, aids in getting infant back to sleep.

Easier on the Mother . . .

By providing more comfort and extra sleep for the baby, DENTOCAIN LOTION MILD grants the mother greater peace of mind and several additional hours of necessary rest.

DENTOCAIN ADULT is also useful in providing temporary relief for pain of adult toothache.

Dentocain Co., Bloomfield, Conn., U.S.A. Professional samples and descriptive literature sent on request.

NEW BOOKS IN REVIEW

MULTIPLE IMPACT THERAPY WITH FAMILIES, Edited by Robert MacGregor, Ph.D., Agnes M. Ritchie, M.S.W., Alberto C. Serrano, M.D. and Franklin P. Schuster, Jr., M.D. under the direction of Eugene C. MacDonald, Jr. and Harold A. Goohshian, McGraw-Hill Book Company, Blakiston Division, N. Y., 320 pp. $9.95.

Reviewed by: LOUIS H. NAHUM

This book describes a method, that of helping a family grow as it confronts the crises of its adolescent members. It reports a six-year study of the family psychotherapy research staff at the University of Texas Medical branch. The method was conceived in 1956. After experimenting with different approaches, the staff thought that the best way to overcome obstacles in family rehabilitative processes might be if arrangements could be made for the adolescent, his parents and other significant members of the family and community to meet for two days of intensive treatment with a psychotherapy team, in this case composed of three psychiatrists, two psychologists and one social worker. There can be a guest psychotherapist and others in training also present as a part of the team.

There is a definite trend in family service agencies towards dealing with families rather than with individual clients. There is a similar trend in the curricula in pastoral theology and postoral counselling, towards dealing with the whole family. Social workers are actively considering the approach implied in family therapy. It is known now from the classic studies of Professor Theodore Lidz and his Yale group that patterns of parental interaction can produce and maintain developmental arrest in children resulting in behavioral maladjustments in adolescents. The authors of the multidisciplinary approach start with the hypothesis that interaction among the team itself and with the family in crisis may serve as model behavior that can help the family in problem solving. If the team respects the family and believes in its capacity for changes, then it can lead to family self-evaluation so that it can revise its self-rehabilitative function.

The team to be successful must obtain pertinent life history material, and make and revise formulations of individual and family dynamics. They must observe and interpret the realistic and transference reactions of the family to the team and they must check irrational responses of the family. Obviously, there is room here for varying degrees of success depending upon the skill and wisdom of the members of the team. After summarizing and reviewing the data, they must define accurately the interpersonal problems. They must be able to work on and through these problems until it becomes clear how the family relationships might be favorably altered.

The results of this particular team indicate that multiple impact therapy succeeds in the majority of instances in mobilizing healthy interpersonal processes within the family and that it is a method of choice of initiating therapy when a family crisis exists. It of course is a method of choice of initiating therapy when a family crisis exists and it is suited for families with adolescents that cannot be involved in individual psychotherapy especially the childish adolescent.

The follow-up studies indicate that multiple impact therapy has achieved an unusual degree of success with neurotic and schizophrenic adolescents. The method should be able to define the family interaction that produces neurotic and schizophrenic disturbances in adolescents.

There are many strengths of this type of therapy aside from its therapeutic effectiveness. It will utilize the creative capacities of a professional group to develop new theories about behavior. To develop much data for analysis and testing, it takes so much time however to formulate dynamics and therapeutic strategy, that in six years the authors have succeeded in studying sixty-two cases. A chapter devoted to a session with the Dyal family explains why this method is so time consuming.

It is certain that there will be applications and uses of this type of therapy besides treatment, accumulating data and making possible fundamental formulations. It might become a training medium in family dynamics for medical students, social workers, psychological internes, psychiatric residents and practicing professional people. But for the team itself it provides the continuous type of inservice training inherent in a new and creative therapeutic approach.

CURRENT PRACTICE IN ORTHOPAEDIC SURGERY, Volume II by John P. Adams, B.S., M.D., FACS, Editor. The C. V. Mosby Company, St. Louis, 1964. 231 pp., illustrated. $13.50.

Reviewed by: DENIS S. O'CONNOR

This volume contains nine papers, all well written and well illustrated by men who unquestionably are able in their particular fields.

The first section on what is headed "orthopaedic surgery" consists of two papers—one on tendon transfers in the hand for nerve paralysis and the other an essay on the sensibility of the hand.

The second section on "fractures and trauma" is composed of five subjects three of which are special area fractures, one is the management of acute vascular injuries and one is on joint injuries of the fingers.

The third section labled "miscellaneous" contains two philosophical dissertations having some orthopaedic connotations but of little practical value to the practicing physician.

While all the contributions except for the last two are very good, the reviewer finds it difficult to find justification for the title of this book. The orthopaedic field of today has been sharply circumscribed by the development of neurosurgery, vascular surgery and hand surgery. Even fractures are not handled wholly by orthopaedists and it is toward the general surgeon and the general practitioner who handle fractures that education in the treatment of fractures should be directed.

While some orthopaedic surgeons, especially those located in small communities and those who are limited in their field only by what they feel competent to do still do hand surgery, neurological surgery and vascular surgery, in the better controlled hospitals these new fields of surgery are recognized as distinct specialties and orthopaedists work in these fields at their peril.

It would seem, therefore, that the title to this book is a bit misleading. Were it designated as the current practice in industrial surgery or surgery of trauma, two fields of surgery which definitely have many practitioners, the reviewer feels that this book could be recommended enthusiastically because these latter groups are basically general surgeons whose fields do impinge on orthopaedic surgery but whose knowledge and experience in orthopaedic surgery may be limited.

Subject to the somewhat misleading value of the title, this book can be recommended for general practitioners and general surgeons whose practice requires knowledge of orthopaedic surgery, neurosurgery, hand surgery and vascular surgery.

A MISSION IN ACTION: The History of the Regional Hospital Plan of New York University, by Clarence E. de la Chapelle and Frode Jensen, New York University Press, New York, 1964, 177 pp. $4.00.

Reviewed by: GERALD I. PITEGOFF

Taking cognizance that all levels of higher education are the function befitting a university, in 1944 the then Acting Dean of the College of Medicine, New York University began to think and plan ahead for the education of the returning physician-soldier. Such education had to be the responsibility of the medical school, planned and designed with the same diligence devoted to undergraduate medical education. The quality of medical care would depend upon the excellence of the medical education provided for the returning physician. The medical center would have the social responsibility of being the guardian of the community health.

This monograph represents the program instituted by the Postgraduate Division, College of Medicine, New York University to implement the concept of a medical center. A grant from the Kellogg Foundation, long interested in health problems of rural communities, enabled the Postgraduate Division to plan to meet the needs of three groups of physicians: the returning physician veteran who required review courses before returning to practice; those who had been in accelerated medical curricula and abbreviated internships and stood in need of additional education; and those who wished one or more years of training to prepare for specialization, teaching, or research. By 1947, sufficient knowledge and experience had been amassed to project a Regional Hospital Plan.

The Regional Hospital Plan, begun in September, 1947 and modified in 1953, remained in effect until June, 1964. The University granted regional affiliates the privilege of sending residents to the Medical Center for continuation courses with tuition waived; the faculty members of the University were made available without charge to the member hospitals for the purpose of training house staffs. The participation of the entire active staff of the member hospital was required. The regional hospital was required to choose a junior attending physician to function as a coordinator to provide liaison between the Medical Center and the hospital. The faculty visitor was asked to report to the Director of the Plan concerning the nature of participation, his impression of the staff and his suggestions for improvement. In general, the constructive criticism of the educational program resulted in a higher standard of medical education and community health care.

Twenty-one hospitals in New York, New Jersey and Connecticut participated in the Plan at some time between 1947 and 1964. The reactions to the experience were described as disappointing and gratifying depending, in part, upon the degree of participation of the member hospitals. The consensus was that the benefits in higher medical educational standards justified the faculty expenditure of time and effort.

Macaulay, the historian, has written: "To know the past is to predict the future." This presentation of the educational experience of New York University with postgraduate medical education is worthwhile reading for all who are involved in the complex problems of providing a satisfactory plan for the provision of the best in medical services for the American public.

POLYPOID LESIONS OF THE GASTROINTESTINAL TRACT. Volume II in the series, MAJOR PROBLEMS IN CLINICAL SURGERY, First Edition, by Claude E. Welch, M.D.; Consulting Editor, J. Engleberg Dumphy, M.D., W. B. Saunders Co., Philadelphia and London, 1964. 148 pp., illustrated, $7.50.

Reviewed by: JAMES R. CULLEN

Doctor J. E. Dumphy, consulting editor, writes in the foreword concerning the above work, "In this volume, Doctor Claude Welch presents a modern point of view. Due consideration is given to the well-established observation that a benign colonic polyp on a stalk rarely becomes a metastasizing cancer. Doctor Welch points out, however, that this does not greatly alter the practical management of the paient who presents with an asymptomatic small filling defect in the gastrointestinal tract. In a concise and logical manner, the nature of polyps is analyzed and a sound program for management is presented. His opinions are supported by his extensive, personal experience over the last ten years at the Massachusetts General Hospital. Difficult decisions are illustrated by excellent short case reports. The reader will find here a refreshing educational experience as well as an excellent source of a solution of clinical problems occasioned by a polypoid filling defect in the gastrointestinal tract." This foreword in itself is a good summary of the contents of this book, which consists of nine chapters in all, discussing polypoid lesions of the colon and rectum with their importance; multiple polyposis and familial polyposis; unusual polypoid lesions of the colon and rectum; practical considerations in the treatment of polypoid lesions of the colon and rectum; polypoid lesions of the small intestine; polypoid lesions of the stomach; and a final chapter on past, present and future which deals with the origin of much of the material in this book, telling what has been solved to date about polypoid lesions, what is still unknown and what bridges will be crossed in the future to arrive at more definitive knowledge of colon lesions.

In the early chapters, Doctor Welch discusses the importance of a sigmoidoscopic examination, giving his own ideas on just how this may be best performed. He points out the relationship between papillary adenoma and simple adenoma

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and polypoid carcinoma as they are seen both in the gross and microscopic studies. He illustrates his discussion with many cases treated at the Massachusetts General Hospital and discusses the interpretation of available data on these lesions by surgeons of differing views. He believes that there is no doubt that the papillary adenoma is a pre-malignant lesion. He also states that most simple adenomas remain so during the life of the host. However, he believes that the carcinoma develops much more commonly in simple adenomas than in the normal mucosa of the colon and the rectum. He also believes that most cancers arise in simple adenomatous polyps—an interpretation which he quickly states is not held by some of the leading pathologists, who believe that most of the cancers of the colon arise de nouveau or from papillary adenomas.

In the chapter on practical considerations in the treatment of polypoid lesions of the colon and rectum, the author points out his methods of treatment of polypoid lesions located above the reach of the sigmoidoscope; the preparation of the bowel for surgery; discusses the identification of polyps; compares polypectomy versus resection; defines the extent of the resection, whether subtotal or total colectomy; and discusses low anterior resections as compared to combined abdominal perineal resections. An interesting part of this discussion is concerned with the removal of polyps through the sigmoidoscope and the complications occasionally seen.

The chapters on polypoid lesions of the small intestine and the stomach are brief but very interesting, again presenting unusual experiences as recorded in a review of the Massachusetts General Hospital experience in gastric and small intestinal polyps.

All in all, this book summarizes in a very concise way our present day concepts in the diagnosis and treatment of polypoid lesions of the gastrointestinal tract. This subject is heard very commonly at national and sectional surgical meetings and evokes considerable interest by all clinicians who have to treat these conditions. This book is very worthwhile, is well illustrated and interesting to read, probably because of the author's own easy method of describing his ideas, which are complemented by the many case reports. It is of a special interest to surgeons but also will enhance the diagnostic acumen of any physician interested in lesions of the gastrointestinal tract.

SCINTILLATION SCANNING IN CLINICAL MEDICINE, by James L. Quinn, III, M.D. W. B. Saunders Company, Philadelphia, 1964. 278 pp., illustrated. $11.50.

Reviewed by: RICHARD P. SPENCER

The evolution of nuclear medicine has been marked not only by useful Kinetic studies but also by the emergence of scintillation scanning. Such scanning provides data on the anatomic location of activity, and supplements Kinetic information. The majority of these procedures are less than four years old and there had not been, until the present volume, any single compendium of the "state of the art." The chapters of the volume "Scintillation Scanning In Clinical Medicine" represent the written record of a symposium that was held at the Bowman Gray School of Medicine. The 19 chapters are the result of the work of 26 contributors, with Dr. Quinn acting as editor. The topics are up to date and stimulating, and (as to be expected from multiple authorship) somewhat unevenly handled. The majority of scanning techniques are presented and discussed in some detail. Included are: parethyroid scanning with selenomethionine, location of bone metastases with radiostrontium, myocardial scanning using cesium-131, brain and kidney scans with radiomercury, lung scans by means of macroagglomerated albumin—I 131, spleen scanning—with mercury or chromium tagged red blood cells, liver scans with Rose Bengal—I 131, as well as conventional thyroid scans. The volume is perhaps best viewed as "work in progress" in a growing and important area.

PEDIATRIC PROCEDURES. Walter T. Hughes, Jr., M.D., W. B. Saunders Co., Philadelphia, 1964, 208 pp. Illustrated. $7.50.

Reviewed by: LOUIS H. NAHUM

This small book will be appreciated by interns, residents, and even faculty. In fourteen concise chapters excellently illustrated are to be found virtually all the procedures performed on infants and children in the clinic with the exception of cardiac catheterization and renal biopsy. How to restrain the little patient, to bandage him, to resuscitate him, to puncture the pericardium, cisterna magna and spinal canal are all here. How to collect blood specimens, perform transfusions, make appropriate measurements can be found here. Procedures related to the skin are profusely illustrated; how to catheterize and circumcise are all here.

Most of these procedures are passed down from resident to intern by example. Some like liver biopsy, pericardial tap, laryngoscopy and trachiostomy should, of course, be undertaken only with expert supervision until mastery is attained. The dangers of external cardiac massage are made clear and the techniques illustrated to perform this life-saving procedure are excellent.

This book should be carried around by every sub-intern and resident in pediatrics and I am sure the attending staff will be looking through it regularly when no one else is watching. All can learn from it. The format in two column pages and the printing is the usual superb job of Saunders.

Drug Reactions . . . Experiments Of Nature

One should consider stopping all drugs whenever doubt arises about the relationship of an unexpected clinical course to the drugs being given. Only rarely is the situation so urgent that stopping treatment might be riskier than continuing it. Each drug reaction is an experiment set up by nature. The discerning clinician can make use of adversity by planning appropriate studies to elucidate the mechanism of the reaction. Indeed the mimicking of diseases by drug reactions (systemic lupus erythematosus following hydralazine, mental depression following reserpine, Parkinson's syndrome following phenothiazine derivatives, and others) often provides new and valuable hypotheses about the causes of these diseases.—Leo E. Hollister, M.D., in *Postgraduate Medicine,* 37: 1, (Jan.) 1965.

Family Physician Has Key Role In Care Of Mentally Retarded

The family physician today has the key role in the care and treatment of mental retardation—a condition "fully as subtle and complicated as that of open heart surgery or organ transplants."

His responsibilities were spelled out in a report from the American Medical Association Conference on Mental Retardation appearing in the current Journal of the American Medical Association.

The report was compiled by Julius B. Richmond, M.D., of Syracuse, conference chairman; George E. Gardner, M.D., director of the Judge Baker Guidance Clinic, Boston, and George Tarjan, M.D., superintendent and medical director of the Pacific State Hospital, Pomona, Calif.

"In terms of magnitude," they said, "mental retardation is the most handicapping of all childhood disorders.

"Approximately five million individuals diagnosed at some time in their lives as retarded now live in the United States and some 126,000 more are born yearly. A much larger number probably function ineffectively throughout life, though never identified."

And yet, said the conference leaders, perhaps 50 per cent of the cases of mental retardation are preventable.

With major infections being conquered, with many metabolic and nutritional disorders brought under relatively effective control, "the physician is at last permitted the time and energy necessary to develop the sophistication he must have in order to grapple effectively on a clinical level with this disorder." The report itself is intended to serve as a handbook on mental retardation and will be widely distributed to physicians and medical schools.

It delineates the latest knowledge concerning prevention, diagnosis and treatment; lists facilities and services necessary to provide maximum help for the retarded child; offers suggestions for helping the retarded child's family meet their problems, and defines some of the research and education problems which must be solved in coming to grips with retardation.

The report also seeks to encourage new and more rewarding methods of care at the community level where, it is felt, best results can be anticipated. These methods, however, require new facilities, new planning and new organization so that comprehensive, as opposed to piecemeal, care can be provided.

It is not enough, the report pointed out, that physicians be well informed and well organized to cope with the problems of mental retardation. Communities, nationwide, must also be organized so that supporting services—family counseling, psychological testing, special education, rehabilitation and vocational training—are readily available for the retarded.

In other words, mental retardation is not only a medical problem, it is also an "educational and social problem of vast dimensions," the report said.

"The nation, however, also possesses a substantial reservoir of knowledge and skill in this demanding field," it continued. "Could all this knowledge be put into effective use immediately, it is estimated that as much as half of all retardation might be prevented and the lives of the remaining victims rendered more productive and fulfilled."

It has been apparent for some years, Dr. Richmond noted, that the problems of the mentally retarded have "not received adequate attention."

But interest in mental retardation is now on the upsurge, he added, stimulated by the interest of the late President John F. Kennedy, congressional appropriations for building and expanding facilities and the increased activities of voluntary organizations.

"Now, with medical progress having dealt relatively effectively with the acute disorders of childhood, the time is ripe for renewed efforts in this field." he said.

That primary physicians, rather than the specialists in mental disorders, should spearhead this effort is due to what the report termed the "particularly effective position" of the primary physician.

It is the doctor in private practice—the general practitioner, the pediatrician, the internist—who sees children in their first years of life.

Thus, the primary physician often has an opportunity to identify mental retardation in a child years before it might otherwise be recognized.

Early diagnosis, in turn, means early help for the retarded child when chances of reversing retardation are usually at their best.

This is particularly true in what is termed "sociocultural retardation." In such cases, the report said, "Enrichment of the child's environment begun early enough may save the child from a life-time handicap."

"Mental retardation now poses to the primary physician what is in essence, a more complicated medical problem than many he may have had time and resources to attack before."

But it is a problem with which the primary physician can cope by expanding his knowledge and modifying the skills and techniques he uses with all cases of chronic illness, the report added.

"The primary physician faces a new challenge in retardation, not because the problem is new but because for the first time he has the necessary time and resources with which to confront it."

Heavy Smoking May Stimulate Blockage Of Small Arteries

Heavy cigarette smoking may be implicated in the blockage and ultimate destruction of smaller blood vessels, particularly in the legs, a New York surgeon said today.

The possible connection between smoking habits and a condition known as peripheral atherosclerotic occlusive disease, was reported by Jere W. Lord, Jr., M.D., in the current Journal of the American Medical Association.

This condition—in essence atherosclerosis of the arteries supplying the skin and outer muscle layers—is caused by accumulations of fatty-like deposits known as plaque on the artery walls. Eventually the plaque may entirely block the flow of blood.

Since circulation is by nature the least efficient in the legs, it is here that atherosclerosis of the peripheral blood vessels is more likely to occur.

Dr. Lord, of the New York University Post-Graduate Medical School, said a study of 100 consecutive patients operated on for atherosclerotic occlusion of the peripheral blood vessels showed that 94 were heavy cigarette smokers. Of the remaining patients, four were classified as casual smokers and two were non-smokers.

"Heavy smokers" Dr. Lord defined as those who consumed a pack or more of cigarettes daily for at least 20 years. Those patients who smoked less than a pack a day or who had been smoking for less than 20 years he classified as "casual smokers."

The study was conducted among non-diabetic patients between the ages of 40 and 70. Diabetics and persons over 70 were excluded, he explained, because of the possibility that they are more susceptible to plaque formations.

Four pathways exist by which heavy cigarette smoking may contribute to atherosclerotic plaque, Dr. Lord said.

1. Tobacco may cause an allergic-type reaction in some individuals, with the arterial walls as the "target."

2. Inhaled tobacco smoke, by some as yet unexplained mechanism, is known to increase the fatty acid content of the blood. The significance of this is that fatty acids are a primary ingredient of plaque.

3. Another possibility is that inhaled tobacco smoke has the ability to upset the clotting properties of the blood. There is some evidence that prolonged heavy smoking may contribute to the formation of small clots which in turn serve as the nucleus of plaque formation.

4. It is known that smoking stimulates the heart output increasing blood velocity. This stepped up blood flow, in turn, reduces the pressure exerted on aterial walls, creating a condition more favorable to plaque formation.

Some plaque formation is to be expected in older persons, Dr. Lord said. "As long as blood flows it seems inevitable that atherosclerotic lesions, not necessarily of clinical significance, will appear eventually in every human who lives into the ninth and tenth decades."

The findings of the study, however, point out that in some individuals heavy cigarette smoking may accelerate the occurrence of atherosclerotic lesions, he said. Thus obstructive arterial disease "appears at an earlier age and to a more severe degree."

In any event, Dr. Lord concluded, the study tends to make it clear that "in the non-diabetic non-smoker, atherosclerotic peripheral arterial occlusive disease is an unusual finding under the age of 70 years."

JAMA Editorial Questions Warren Report Proposal

The Warren Commission recommendation that the President's physician always accompany him on trips deserves further study, an editorial in the current Journal of the American Medical Association said.

Recommendation No. 9 of the Report of the Warren Commission on the Assassination of President Kennedy reads:

"The Commission recommends that the President's physician always accompany him during his travels and occupy a position near the President where he can be immediately available in case of any emergency."

While there are instances in which the immediate availability of a physician can be life-saving, the editorial said, in one person's life such an instance is so unlikely that in fact it does not even occur in most lives.

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"The greater help an accompanying physician could give would be in the area of preventive medicine, for example, in persuading a coronary-prone President to lighten a particular day's schedule if there were ominous signs," the editorial said. "To accomplish this purpose, however, a physician must accompany the President not only on his travels but always."

The editorial said one possible solution would be to have physicians in several specialties "on call" during the President's visit to a particular city. Members of the presidential party would then proceed directly to the nearest medical facility, should the need for emergency care arise. This would provide the best and most immediately available" care in emergency situations, according to the editorial.

Heart Association Endorses Legislation To Expand Medical Library Facilities

Support was voiced recently by the American Heart Association for bills newly introduced in Congress which would expand medical library facilities.

Commending the purpose of the proposed legislation, Dr. Carleton B. Chapman, Association President, pointed out that it would implement recommendations included in the recent report of the President's Commission on Heart Disease, Cancer and Stroke.

Twin bills were presented to both houses of Congress January 19. The Senate version, S♯597, was introduced by Senator Lister Hill (D.-Ala.) and referred to the Committee on Education and Welfare of which he is chairman. The House measure, HR♯3142, was introduced by Rep. Oren Harris (D-Ark.) and referred to the Committee on Interstate and Foreign Commerce which he chairs.

Dr. Chapman's endorsement of the new bills followed a recent action by the AHA Board of Directors supporting such legislation in principle, with the recommendation that it embody the following features.

1. Federal assistance in the construction of new medical libraries, and the renovation, expansion or rehabilitation of existing facilities.

2. Assistance in the training of medical librarians and other information specialists in the health sciences.

3. Assistance in the conduct of research and investigations in the field of medical library science and related activities, and in the development of new techniques, systems and equipment for processing, storing and distributing information in the sciences related to health.

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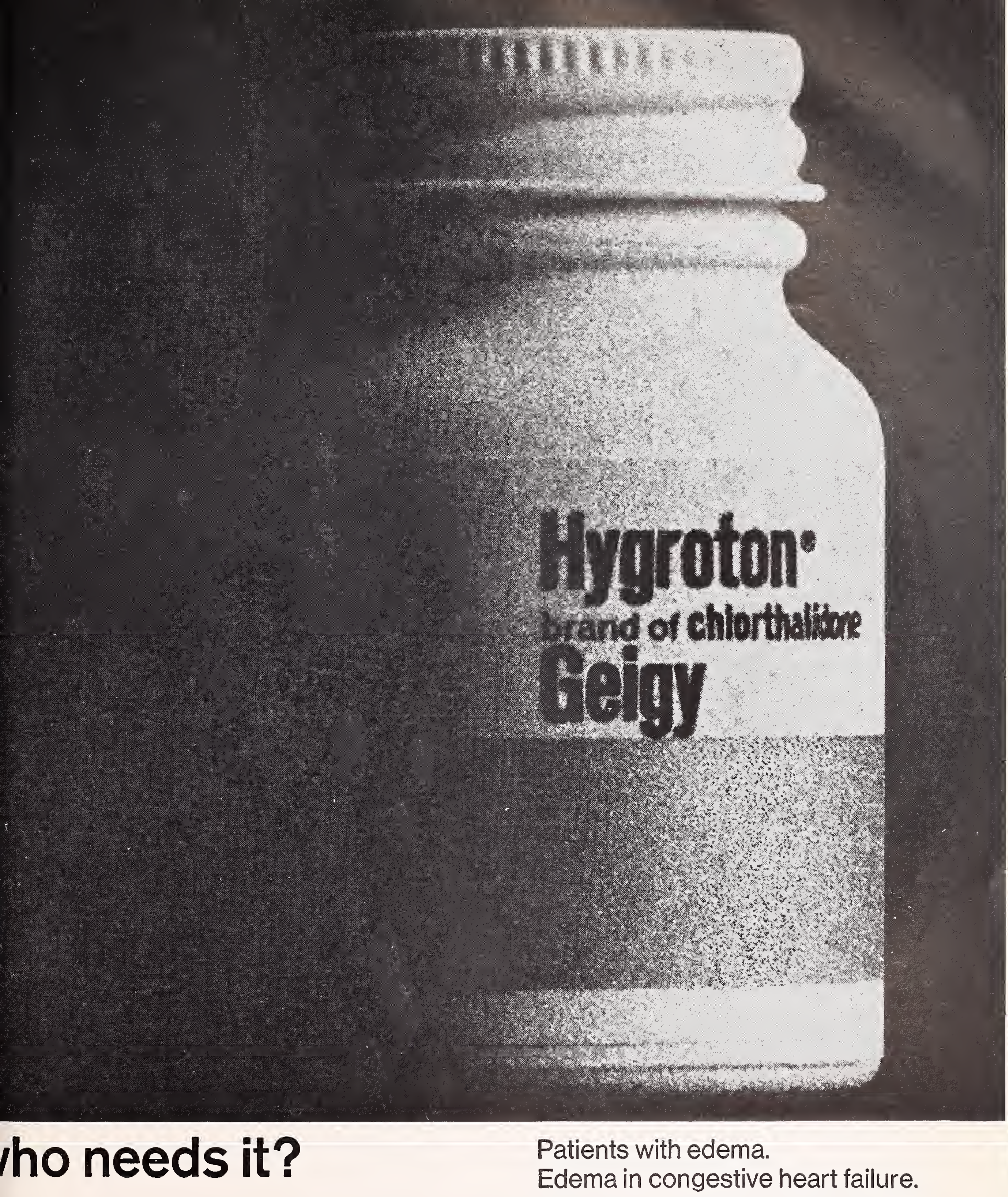

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Dr. Chapman said the AHA Board's action grew out of recognition that the sheer volume of new research findings in the cardiovascular field is hampering their application for the benefit of patients. Additional and improved library facilities will do much, he said, to help improve communications within the health field and overcome the lag.

Side Effects Rare Among Hyperbaric Personnel

Medical personnel suffer few side effects as a result of working in a high pressure oxygen chamber, a survey at Duke University Medical Center, Durham, N.C., indicated recently.

The experiences of 52 staff members in the Duke hyperbaric chamber formed the basis of the study reported by Drs. Banks Anderson Jr., Robert E. Whalen and Herbert A. Saltzman in the current Journal of the American Medical Association.

Some 1,500 individual exposures to a mean pressure of 29 pounds per square inch guage, equivalent to 65 feet of sea water, were analyzed. The mean exposure time for each person was about an hour. The survey was conducted anonymously by questionnaire.

By far the most common symptom was ear or sinus pain occurring during compression, according to the report. Forty-seven per cent of the group at some time experienced such pain. Symptoms at high pressure were infrequent, consisting mainly of slight nitrogen narcosis or "rapture of the deep." Ear and sinus pain were noted on recompression on at least one occasion by 28 per cent of the staff.

The classic symptoms of decompression sickness, such as the bends, occurred only rarely, the Duke survey showed.

These symptoms were so mild they did not require treatment and were not reported until the questionnaire was submitted, the authors pointed out.

The Valsalva technique, in which a person takes a deep breath and makes an effort to exhale while holding his nose and mouth closed, was used to equalize ear pressure. This enabled all but one staff member desiring to work at high pressure to tolerate the compression, it was reported.

Hardening of Arteries Found Around Ulcers

Abnormalities have been found in the blood vessels surrounding chronic stomach ulcers which bear "strong similarities" to arteriosclerosis and atherosclerosis.

The arteries around the ulcers revealed degenerative changes akin to the loss of elasticity, thickening and hardening known as arteriosclerosis. They also contained fat deposits characteristic of atherosclerosis.

The findings were reported by Dr. W. E. Stehbens, Canberra, Australia, in the current Archives of Pathology, published by the American Medical Association.

Dr. Stehbens termed the fat deposits an "important finding" because their presence previously had been ignored or denied.

His results were based on a comparison of 40 surgical and 2 autopsy specimens of chronic stomach ulcers with material taken from an apparently normal area of the stomach.

Fat deposits were found in blood vessels of both the ulcer and the normal specimens. However, in 25 subjects, fat deposition was more severe in the ulcer than in the control material. Fat occurred in arteries of all sizes around the ulcers, but none was found in the small arteries of the normal specimens.

Commenting on the report, an editorial in the current AMA Journal said the accentuation of fat deposition in blood vessels near these ulcers "may provide an important clue to the causation of atherosclerosis."

Thickening of the small arteries in the ulcer specimens was seen microscopically even at low magnification while this was seen only occasionally in the normal material, Dr. Stehbens reported. The more advanced changes seen in the specimens were consistent with the more severe hardening of the artries usually associated with high blood pressure, he added.

Dr. Stehbens is affiliated with the Australian National University and the University of Sydney.

Cadavers May Supply Kidneys

If and when kidney transplants become clinically useful, there apparently can be a good supply from the cadavers of older persons.

Using emergency autopsy and transplant procedures, two Nashville, Tennessee physicians have successfully removed kidneys from patients after they died in a Veterans Administration hospital and transplanted these kidneys in younger patients.

Of five patients—recipients of six donor kidneys—three are still alive after 14, 12 and 6 months. Other complications may have caused the deaths of the other two, the doctors said.

It's possible that a sizeable percentage of elderly persons who die have healthy, transplantable kidneys, report Norman Ende, M.D., and Charles F.

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Zukoski, M.D., in the current issue of the Journal of the American Medical Association.

A survey of autopsies they performed seems to confirm this, the doctors said. Of 50 autopsies, approximately 34 per cent of the cases had healthy, transplantable kidneys. Thirty-one of the persons examined were over 60 when they died.

This finding is higher than earlier estimates. It could mean that elderly death victims will in the future be the source of many transplantable kidneys. Such transplants of course require the legal approval of the family.

Probably an even higher percentage of younger persons who die have healthy kidneys, said Drs. Ende and Zukoski.

The only other successful source of kidneys has been living persons. A living donor not only must undergo surgery for removal of a kidney, but also runs the risk of later disease in his remaining kidney. A source of kidneys from recently dead persons could remove such risks.

Of the more than 260 kidney transplants performed so far in the world, approximately 68 per cent of the kidneys have come from live donors.

How long transplanted cadaver kidneys from older persons will function in their younger hosts remains to be determined, the physicians said.

Data obtained from life insurance companies, they said, indicate that men in good health at age 60 have only six chances in 1,000 of dying from kidney disease in the following 20 years.

This means the patients who received the older kidneys may have an extended life expectancy. Two years' survival after a kidney transplant, however, now is considered an excellent result.

The emergency procedure for transferring a kidney from a person who has just died to a living patient is a delicate, fast-moving procedure that demands great care and accuracy.

After one kidney is selected and removed for transplantation by the surgeon, a pathologist examines the remaining kidney for signs of disease or deterioration. It is assumed that the kidney used for the transplant is at least as good as the one being examined.

Meanwhile, the patient who will receive the kidney is being prepared for surgery. When the pathologist gives his approval, the transplant begins. These procedures put increasing responsibility on a hospital's pathology staff, said Drs. Ende and Zukoski.

If kidney transplants continue to be increasingly successful, there may be more use of kidneys from elderly death victims. The use of such kidneys, however, will continue to require careful autopsy procedure.

"The autopsy will then not be restricted to the role of a teaching and research tool, but rather it will afford acute and immediate clinical value," said Drs. Ende and Zukoski.

'Practical' Test Of MDs Urged

Certain short-answer types of examinations which are corrected by machine were disparaged by the president of the Federation of State Medical Boards of the United States, who urged that doctors seeking licensure be given "practical examinations."

Speaking at a meeting of the Federation in Chicago, Andrew M. Gehret, M.D., Wilmington, Del., pointed out that examining boards "would be able to observe the applicant while he is actually diagnosing and treating a patient's illness. By this method, in addition to testing knowledge and skills, information can be gained as to how this new physician approaches a crusty, querulous, and thoroughly frightened patient. . . ."

Dr. Gehret drew a parallel between his proposal and baseball, where each spring "rookies are brought to the training camps for trial and testing by actual performance."

He said, "Despite our efforts in thought and research toward providing the ultimate in examinations, we have overlooked or possibly discarded a method by which the candidate can demonstrate his fitness for doing, under our close scrutiny, the very tasks in which we are trying to assess his ability."

By-Pass Of Right Side Of Heart Eases Difficult Inborn Defects

A partial by-pass of the heart's right side can relieve inborn defects for which no established corrective procedure is yet available, according to a six-year "progress report" on the procedure by Dr. William W. L. Glenn and his associates at Yale University School of Medicine and Grace-New Haven Community Hospital.

The report, published in the current issue of *Circulation,* a scientific journal of the American Heart Association, describes results with 38 patients, ranging in age from one day to 44 years. Thirty-two were 10 years old or younger at the time of surgery. Each was born with any one of several grave defects of the right side of the heart that prevented "used" or de-oxygenated blood from being pumped properly to the lungs for re-oxygenation. Eight different conditions having this effect have been treated, according to the report.

The operation involves a rearrangement of nearby blood vessels so that the "used" blood by-

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SIDE EFFECTS: Nausea, GI upset, or mild salicylism may rarely occur. Symptoms of hypercorticoidism dictate reduction of dosage of Arthralgen-PR.

PRECAUTION: Reduction in dosage of Arthralgen-PR given over a long period should be gradual, never abrupt.

CONTRAINDICATIONS: Hypersensitivity to any ingredient.

As with any drug containing prednisone, Arthralgen-PR is contraindicated, or should be administered only with care, to patients with peptic ulcer, tuberculosis, nephritis, diabetes mellitus, acute psychoses, Cushing's syndrome (or Cushing's disease), overwhelming spreading (systemic) infection, or predisposition to thrombophlebitis.

Arthralgen-PR is generally contraindicated in patients with uremia and viral infections, including poliomyelitis, vaccinia, ocular herpes simplex, and fungus infections of the eye. It is also contraindicated in patients with chicken pox or susceptible persons exposed to it.

SUPPLY: Arthralgen (white, scored) and Arthralgen-PR (yellow, scored) tablets are available in bottles of 100 and 500.

REF: 1. Boreus & Sandberg, ACTA. PHYSIOL. SCAND., 28:266, 1953. 2. Cohen, et al.: J.A.M.A., 165:225, 1957.

passes the right side of the heart and flows directly to the lungs for oxygen replenishment. Specifically, the upper of the two great veins that normally return blood to the heart is joined to the pipeline leading from the right heart to the lungs. The bypass arrangement is known as a "caval-pulmonary" shunt (from the name of the blood vessels involved, the superior vena cava and the pulmonary artery). It has the effect of relieving to a considerable extent the work load originally carried by the malformed heart.

Thirty-one of the patients in the series are alive; all have shown marked improvement though they were once considered "hopelessly" doomed. The first human case is also the longest survivor. A boy of seven when the operation was performed, he has been leading a normal life for the past six and a half years.

Of the eight patients who did not survive, six, including a one-day old and a six-day old child, died soon after surgery and were termed "operative" deaths. In some of these patients, the operation was "last-chance" surgery, and because of the age of the patient and the nature of the malformation, death was considered "probably not preventable."

The Connecticut surgeons pointed out that the *Circulation* report is designed to show "our progress with the clinical application of the procedure, not to offer a definitive evaluation that must await further operative experience and a longer period of follow-up examination."

Co-authors with Dr. Glenn are Drs. Nelson K. Ordway, Norman S. Talner, and Edward P. Call, Jr.

Hysteria . . . Pandemonium . . . Pressure

Legislation that is conceived and enacted in an atmosphere of panic is usually ill-advised and may be disastrous. This statement applies to the passage of the Kefauver-Harris amendments to the Food, Drug and Cosmetic Act. It had its origin in the hysteria and panic of the thalidomide tragedy, it was nurtured and developed in the pandemonium of the biased hearings before the Kefauver Committee of the Senate, and through the pressure of an impetuous administration, was enacted into law.—John C. Krantz, Jr., Ph.D., in *Military Medicine,* 130: 1, (Jan.) 1965.

New Medical Society

The Southeastern Utah Medical Society has been organized, with a membership of 10 physicians practicing in the communities of Moab, Monticello, Blandings, and Mexican Hat.

Phenylbutazone And Acute Leukemia

About 25 cases of acute leukemia occurring in patients taking phenylbutazone (Butazolidin—Geigy) have been reported since R. H. D. Bean first suggested an association in 1960 (Brit. Med. J., 2:1552, 1960). The youngest person affected was a 44-year-old woman, and the smallest dosage was 4 Gm. of phenylbutazone taken over a period of six days.

The only statistical evidence offered for a cause-and-effect relationship between the use of phenylbutazone and acute leukemia is found in the study by H. J. Woodliff and L. Dougan (Brit. Med. J., 1:744, 1964); they report that eight of 55 patients with acute leukemia in a registry of leukemia and allied disorders had taken phenylbutazone. In five of the eight cases, the authors considered that there was a close association with the development of acute leukemia.

RELATIONSHIP QUESTIONED—The significance of this high incidence of association is questioned by M. D. Innis (Brit. Med. J., 1:1440, May 30, 1964); he cites evidence of association between rheumatic disease and acute leukemia and argues that patients with rheumatoid arthritis who have not been treated with phenylbutazone must serve as controls for purposes of statistical comparison. Since the incidence of acute leukemia in the general population is believed to be about 30 per million, many cases would be expected among those taking phenylbutazone regardless of the effects of the drug. It is not known at this time, therefore, that there is a cause-and-effect relationship between the administration of phenylbutazone and the development of acute leukemia.

Phenylbutazone has other serious side effects, however, including such blood disorders as thrombocytopenic purpura, agranulocytosis, and aplastic anemia, and also dermatitis and hepatitis. This drug as well as its congener, oxyphenbutazone (Tandearil—Geigy), should therefore be used for as short a period as possible, and only when safer antiarthritic drugs such as aspirin are ineffective or cannot be used.

The manufacturer properly warns that the occurrence of fever, sore throat, lesions in the mouth, black or tarry stools, skin reactions of markedly increase in weight demands immediate discontinuance of the drug. A complete blood count should be made before the drug is taken, and at least at weekly intervals thereafter.

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TREPHINING IN ANCIENT PERU (see page 315)

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Connecticut Medicine

editorials

The Fuel Of The Brain

If one wishes to gain an insight into the nature of the food stuffs any organ burns at any time, it is not enough to measure the arterial and venous blood to determine which substances are removed, because they could very well be stored and not used for energy purposes. The classical method is to determine the carbon dioxide production in relation to oxygen consumption, the ratio Co_2/O_2 is called the respiratory quotient R.Q. The theoretical value for the R.Q. when carbohydrate is burned completely is 1, for fat 0.7 and for protein about 0.8. Such a study of the metabolism of the brain of a dog was completed by Himwich and Nahum in 1932,[1] and found to be 1, indicating that the dog brain used exclusively glucose as the primary source of energy under normal resting conditions.

The first question of course was what role insulin played in this process since we all believed insulin was essential for carbohydrate oxidation. Accordingly insulin was eliminated in one series of animals by alloxan and in another by removing the pancreas. The remarkable result was that the R.Q. of the brain remained 1 in the absence of insulin. Obviously the enzymatic mechanisms of the neuron did not require insulin for glucose utilization. It meant that the diabetic brain was not at a handicap. It raised the question as to whether the enzymatic machine varies in different cells of the body or whether insulin acts merely to deliver glucose to some cells through its membrane after which the glucose is oxidized as it is in the neuron. Since then the studies have been extended to the human brain by Sheinberg[2] who found that the human brain also has an R.Q. of 1 and like the dog brain burns glucose almost exclusively for its energy requirement in the adult resting state.

The amount of glucose consumed by human brain was determined by Sheinberg[2] by measuring the total blood flow through the brain and the amount of glucose given up in its passage. He found that brain tissue utilizes about 95 mg. of glucose per minute or 6.2 mg. per 100 grams of brain tissue. This is an extraordinary amount since it represents 70 per cent of the total glucose production of the liver in a normal fasting person. Obviously the rest of the body must use other substances for combustion if perpetual hypoglycemia were not to terminate the life of the animal.

The remarkable dependence of the brain on a constant source of glucose can be recognized in clinical states in which hypoglycemia occurs. With moderate reductions in blood glucose levels as occurs with hyperinsulinism or in some people during hunger, there is well recognized alterations in mood, behavior and intellectual functioning. With profound hypoglycemia there occurs the well recognized consulvions or profound coma. What actually happens in the brain during hypoglycemia still requires elucidation.

Many studies have been made in a wide variety of clinical states to determine the R.Q. of the brain. These include patients in congestive heart failure, myxedema, pernicious anemia, arteriosclerotic and hypertensive cerebral vascular disease, multiple sclerosis, hyperthyroidism, uremia, after changes in posture, under the stress of apprehensions and during vigorous physical exercise. In all instances

THE COVER

TREPHINING IN ANCIENT PERU

ON THE DRY, sunswept Pacific coastline of the Paracas peninsula, a first-century Peruvian surgeon is beginning a trephining operation with the aid of knives of glass-hard obsidian, a crude plant narcotic, cotton, and bandages. Assistants immobilize the patient, and a priest seeks supernatural intervention through incantations and prayers as the slow and highly hazardous operation proceeds. Peru was the center of intensive practice of trephining in the New World, where the operation (opening of the skulls of living patients) can be traced from well before dawn of the Christian era to the twentieth century.

cerebral respiration occurs predominantly at the expense of glucose in a variety of normal and pathological conditions provided glucose is available in the blood passing through the brain.[2]

The great dependence of the brain upon glucose is less than its extreme dependence upon oxygen, largely because there are glucose stores in the brain but no oxygen stores. The human brain uses over 1 m.l. oxygen per second.[2] Complete cessation of the cerebral circulation would result in total exhaustion of the oxygen of the brain in less than ten seconds and relative hypoxia appears much sooner. It is clear that a constant source of oxygen must be available to cerebral tissues. It explains why unconsciousness promptly follows cardiac arrest and why brain function will not return if cardiac resuscitation is not established within two minutes.

Anaerobic glycolysis is possible in the event of decreased oxygen availability and also seems to be more active than respiration in early life when a considerable portion of glucose utilization is directed into fatty acid formation and active deposition of myelin. In the more mature animal however, lipid deposition is essentially complete and glycolysis is minor, since it is needed only for repair or injury or normal turnover. In the adult therefore glucose is directed mainly in 2 pathways. In one it enters the Krebs cycle[3] and is utilized for energy production. In another its utilization goes to replenish some cerebral amino acids like glutamic and aspartic acids which are present in large quantities in the brain and which are essential in the synthesis of brain proteins.

Some of the energy derived from glucose by the neuron goes into the maintenance of its internal environment by transport of electrolytes and solutes across the cell membrane. Potassium and glutamate are kept intracellularly against a concentration gradient and sodium is kept outside the cell membrane against a concentration gradient (the sodium pump), both are active processes within the cell requiring energy. Cellular energy is also essential for the resynthesis of acetyl-choline without which impulse transmission in the nerve fiber and across synapses could not take place.[4] Finally as has been mentioned above glucose oxidation is needed to synthesize glutamate and to maintain the protein lipid and enzymatic structures of the neuron.

One extraordinary role of glucose metabolism, though secondary, is its great importance in the control of the cerebral circulation. We must remember that the six molecules of carbondioxide produced from oxidation of 1 molecule of glucose are vital to the maintenance of the cellular melieu. They regulate the pH and act directly in the intrinsic regulation of cerebral tone by producing vasodilatation of the cerebral vessels. In the absence of evident autonomic nerve influences, the regulation of intracerebral arterioles and cerebral blood flow is dependent upon the vasodilatory action of carbon dioxide. However, in those situations in which oxygen supply declines, oxygen lack also can assist in producing vasodilatation.[5]

From 1932 when glucose was found to be the fuel of the brain, there has accumulated much new data. These have confirmed fully Himwich and Nahum's original observation, but they have gone further and have shown the various ways in which glucose provides the primary source of energy for cellular function, for carrying on the normal activities of the nervous system, for supplying the energy and carbons for synthesis and maintenance of lipids and proteins, for maintaining the optimum pH for cellular function and the important role of the carbon dioxide produced in the regulation of cerebral vascular tone.

The original basic science observation has led to opening up a new field of animal and human experimentation in which practical medicine has benefitted at every step.

L.H.N.

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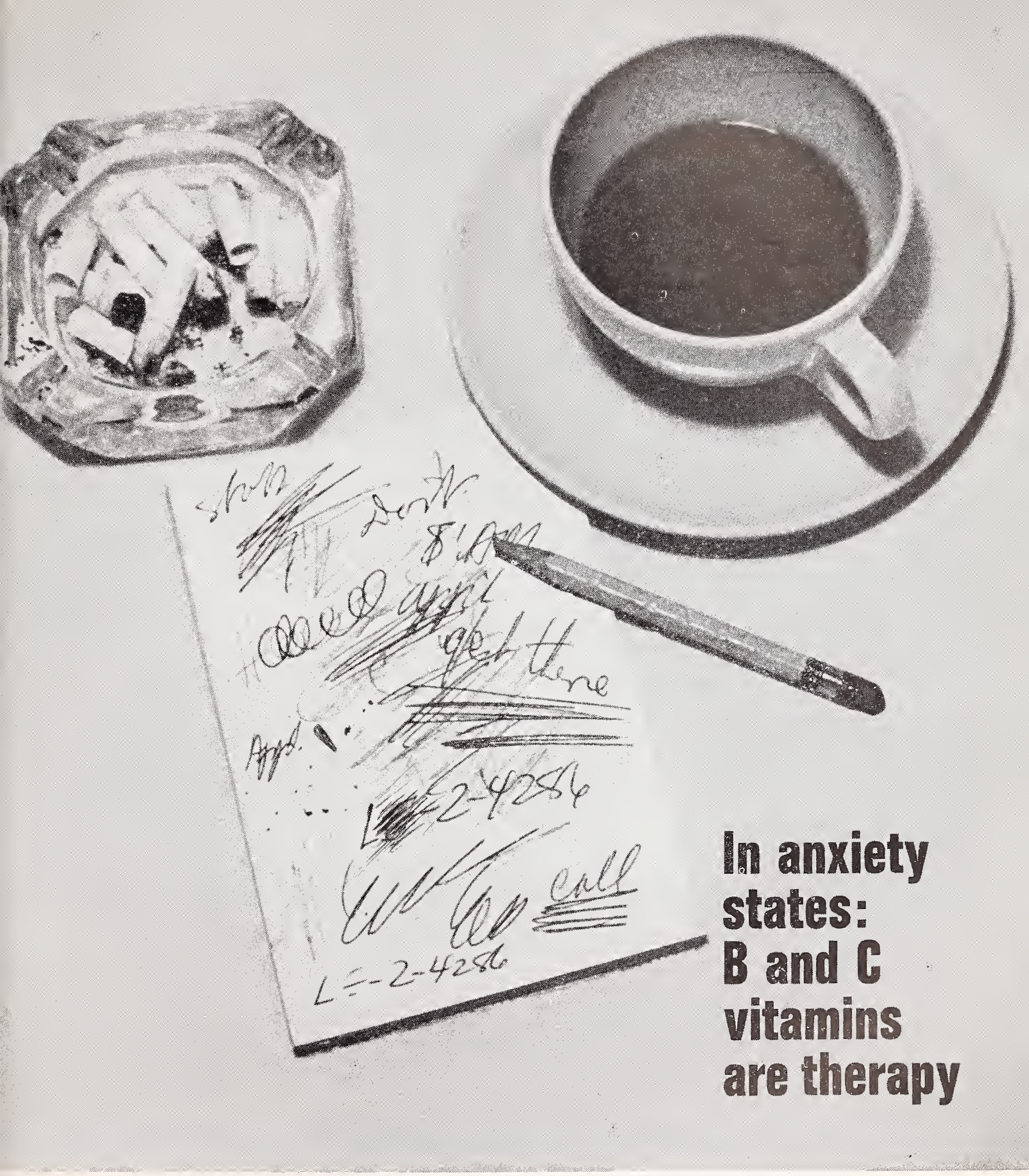
Thrombolysis By Drugs: Low Molecular Dextran

More people are killed in the U.S.A. by intravascular clots than by malignant disease. The Vital Statistics of the United States for 1959, Volume 2, reveals that 343,926 people died of clots while 260,047 died of neoplasms. About 1,800,000 people in this country are victims of cerebrovascular diseases due to thromboses of blood vessels supplying the brain. Three hundred to four hundred thousand persons are suffering from chronic leg ulcers, at least 40 per cent of them are due to previous thromboses. In short thromboembolic disease is a disabling disease of major social importance. This does not even include the victims of coronary artery thrombosis. It is clear that we must work on the supposition that many of the patients who died or are disabled by intravascular thrombosis could be spared if we had an appropriate preventive as well as a clot dissolving treatment.



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Up to the present time we are all searching for a preventive fibrinolytic treatment or simple clot dissolvers. We need studies of all the factors concerned with the deposition and dissolution of fibrin pathologically formed within the body. There is already much evidence that the fibrin formation and nonremoval of this formed fibrin plays a very prominent part in human pathology. It extends to all branches of medicine. Adhesions cannot be formed if fibrin strands are removed by lysis. Hyaline membrane in neonates might be caused by a local lack of fibrinolytic enzymes. Atherosclerosis is thought by some to occur when fibrinolysis does not eliminate the small fibrin deposits on the artery wall. Fibrinolytic removal of fibrin in small vessels is important in the outcome of an inflammatory reaction. Certain inflammatory reactions have been suppressed by induction of fibrinolysis at the appropriate time.[1]

When an artery is thrombosed it is usually in an inapparent site except for retinal artery thrombosis and we are in need of a test that can reveal the existence of thromboses at an inapparent site. Venous thrombosis is more apparent and it is here that clinical studies on thrombolysis is better documented and has received most attention. Kline and Nahum,[2] and Nahum, Kline and Fishbein[3] have dealt with basic aspects of thrombolysis of interest to the clinician. In short the overall significance of the thrombolytic system is slowly becoming known.

Normally two antithetical processes, clot formation and clot lysis are in homeostatic equilibrium in the body in the maintenance of blood fluidity. Reduced fibrinolysis from decreased plasmin and plasminogen levels leads to hypercoagulability or thrombosis whereas accelerated fibrinolysis leads to hypocoagulability or hemorrhagic disease. Physiologic fibrinolytic activity can be inhibited by a lipemia from a fatty meal, pectins of wine or beer, a normal pregnancy into the second stage of labor or a thrombotic episode. It is enhanced by exercise, electroshock, stress, strain, trauma, fear, anxiety, epinephrine, nor-epinephrine, pitressin, pressor amines, procaine, nicotinic acid, protamine and occasionally by increased susceptbility in certain individuals.[1]

There is also what is known as pathologic fibrinolysis as is encountered in physical trauma, hemorrhagic shock, extensive burns, transfusion reactions, anesthesia, obstetrical accidents, major surgery, carcinoma. Chronically pathologic fibrinolysis is encountered in leukemia, cirrhosis, carcinomatosis and paroxysmal nocturnal hemoglobinuria (Von-Kaulla).[1]

One agent Urokinase in achieving therapeutic fibrinolysis has already been dealt with.[4] Now Sawyer et al[5] have reported on the use of low molecular dextran in thrombophlebitis. They produced experimental thrombosis in the jugular vein of a dog injected dextran intravenously and watched resolution of the process. Then they proceeded to its clinical evaluation in 37 patients, 21 of whom had superficial and 18 deep thrombophlebitis. 35 of the patients had a dramatic improvement in symptoms in the first 24 hours, the remaining 4 had a gradual subjective improvement. In 3 patients there was a rapid subsidence of the thrombophlebitic process after failure of response to heparin. The control series consisted of 57 patients treated by conventional means namely heparin and coumadin and the resolution time varied between 11 to 15 days as compared to the dextran treated group with a resolution time of 4.22 days. These figures show unequivocally that intravenous dextran causes rapid resolution of thrombophlebitis of recent origin. Two problems requiring an answer remain to be clarified. The first is whether the clot resolution is due to fibrinolysis. This could have been solved by venography which would demonstrate whether the vascular channel was reopened by the therapy. Sawyer et al did not perform venography on their patients.

If the vein channel was reestablished in what way could low molecular dextran accomplish this. One view expressed by Ratliff[6] is that dextran coats the vascular endothelium especially at sites of injury inhibiting the positive current of injury and repelling the negatively charged thrombin, fibrinogen and platelets. Dextran is supposed to coat the red cells and platelets thereby causing their normal electro-negative charge to be increased and their natural repulsion also increased. This change, however, would if present serve to interfere with thrombus formation or if already formed to prevent propagation. Whether or not it actually causes fibrinolysis by disrupting red cell agglutination still remains to be demonstrated clinically. It must be said, however, that the early dramatic subjective relief seen in most patients cannot be explained by thrombus inhibition alone.

Because of the enormity of the thrombosis problem in clinical medicine we must begin to think in terms of the great need for thrombolytic substances in therapy for thrombosis. We must be able to induce and maintain intense plasma thombolytic activity for prolonged periods of time without deleterious effects upon the patient. Up to the present time neither plasmin nor streptokinase has met this requirement.[2,3] Urokinase can, perhaps Dextran will. But the search for new drugs requires a development and therapy testing program for clot dissolving agents which is almost non-existent and the amounts spent by government and voluntary agencies for research along these lines is still small. Here is room for finding a practical solution for one of mankinds great scourges — intravascular thrombosis.

L.H.N.

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The Menopause: A Physiological Castration

Senescence of the ovary, the basic fault in the menopause is accompanied by a corresponding decline in estrogen production. It is a hormonal deficiency state, fully as much as is myxedema or Addison's disease, except that the former is considered to be "physiological" while the latter, "pathological". No one hesitates to treat myxedema with thyroid or Addison's disease with cortisol. However, because many physicians hold the opinion that the menopause is "physiologic", they proscribe hormonal treatment and prescribe all manner of sedation. In this they are supported by the widespread dogma among the women themselves that the menopause is "natural" and its symptoms should be borne with fortitude.

Those patients who suffer excessively from imbalance of the autonomic nervous system including hot flashes, sexual excesses, sweats, palpitations, spasms of globus hystericus generally receive "homemade psychotherapy", "encouragement" and sedatives to lesson their anxiety. Those who suffer psychogenic disturbances such as apprehension, depression, insomnia, nervousness, headache and frigidity, receive more of the same. But psychotherapy and sedatives are not estrogens which the body lacks and can never be a substitute for the estrogen which the body needs.[1]

There are some women who remain completely asymptomatic and may not display inevitable regressive changes for some years. In fact they may not show the regressive changes of estrogen deficiency in the vaginal mucosa, because small amounts of estrogen of ovarian, adrenal, or extra glandular origin, may be present to maintain the vaginal epithelium in a fairly mature state. But they will show elevated urinary gonadotrophins, they will show progressive osteoporosis and developing arterial disease though perhaps more slowly than others, changes generally accompanying an estrogen deficit. These changes are slow to develop and generally overlooked.[2]

In osteoporosis there is a decrease in stature, development of kyphosis, pain and crushed vertebra. This should not be regarded solely as an aging process. A similar degree of demineralization can be produced experimentally by castration and has been observed in much younger women after extirpation of the ovaries. Furthermore administration of gonadal steroids relieve these symptoms and halt the diminution in stature. To be sure, radiologic signs of improvement may be lacking in some of those patients but radiologic change does not become manifest until 30-40 per cent of demineralization has occurred making this type of evidence quite inadequate.[3,4,5]

It is well known that females entering the menopausal period of life become susceptible to the development of atherosclerosis and ischemic heart disease. This evidence is based upon the ease with which atherosclerosis can be produced by diet in cockerels but not in females. Studies in this country and abroad have shown that the relative incidence of coronary artery disease is 15 to 20 times greater in men than in women under age 40, but after the menopause this gap closes rapidly. Furthermore the incidence of ischemic heart disease is greatly increased in women whose ovaries have been removed. Such evidence serves to bolster the arguments favoring prophylactic estrogen therapy, even though the patient is not troubled by hot flashes and other menopausal complaints. It is clear from all the evidence available that the menopausal women must be considered a physiologic castrate and that replacement therapy would be indicated in everyone with evidence of estrogen lack.[2,6]

In principle replacement therapy for hormonal deficiency is essential to maintain metabolic and homeostatic mechanisms. Nevertheless when such therapy is undertaken it is always wise to consider whether there are any potential hazards involved in such therapy. Greenblatt[1] has carefully analyzed the data available especially with regard to effects upon cancer of the breast and of the uterus. He points out the fallacy of concluding that because ovariectomy often induces temporary remission of breast cancer that therefore estrogens not only exacerbate but also may initiate its growth. In fact others have shown that estrogens sometimes are capable of inducing regressions in breast cancer. Furthermore the incidence of cancer of the breast

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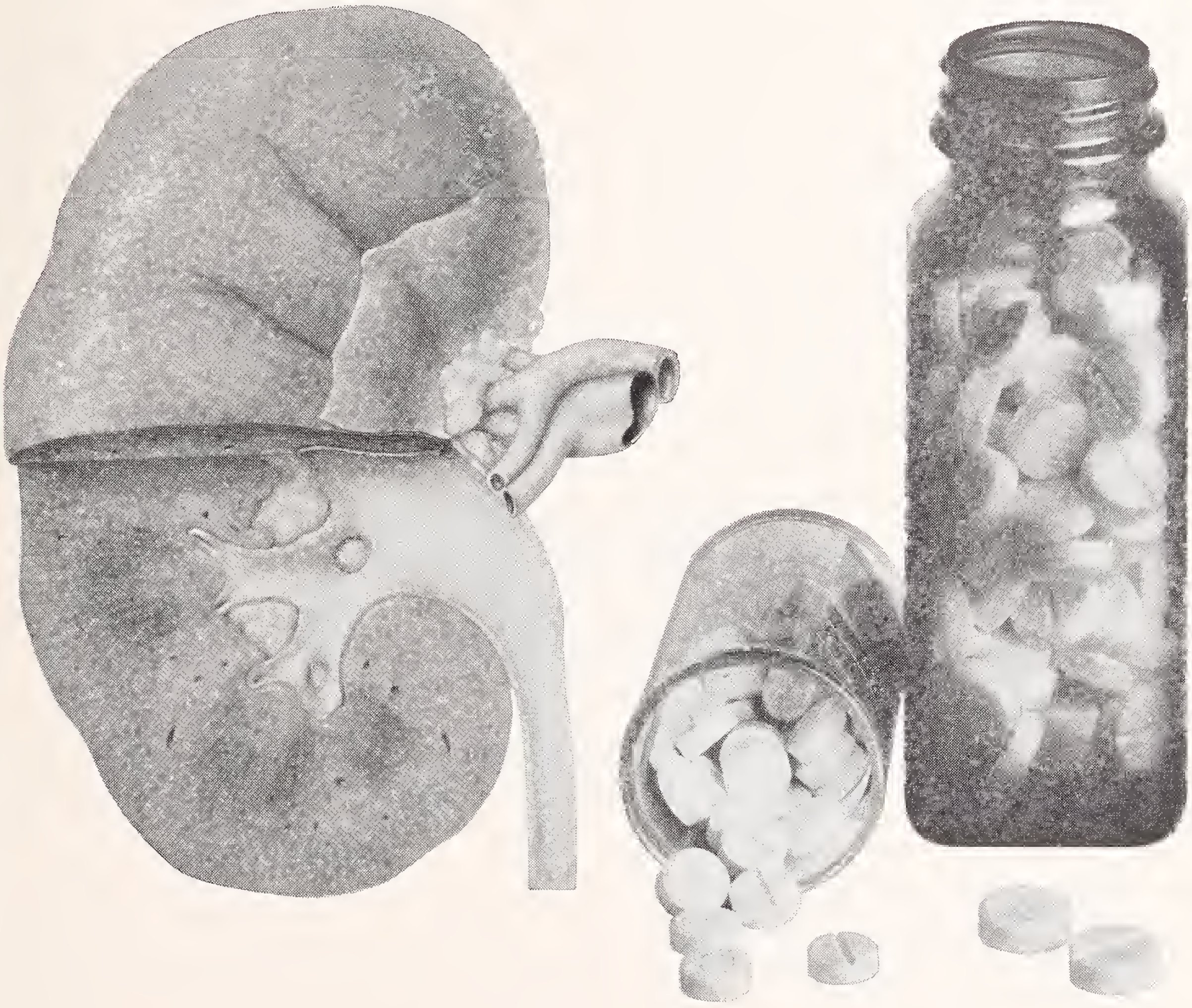

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The development of chlorothiazide and probenecid were events of major importance, but perhaps even more important for the future was the Renal Research Program by which they were developed. When Merck Sharp & Dohme organized this program in 1943, it was expressing in action some of its basic beliefs about research:

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has not materially increased in the past 30 years despite the introduction of estrogens into medical practice.[7]

A relation between estrogens and the development of endometrial carcinoma has been claimed and association between estrogen secreting tumors and endometrial cancer also reported. However, Wallach and Henneman[2] studied 292 post-menopausal women on prolonged estrogen therapy and found only one case of cervical carcinoma and none of breast cancer. During the first 15 years of continuous estrogen therapy four cases of endometrial carcinoma were found, but none in the last 10 years when estrogen was administered in cyclic fashion. Such a study shows that proper administration of estrogen is a safe and effective therapy for post-menopausal women. This conclusion is borne out by experience obtained from treating large series of women with breast cancer with estrogens among whom no cervical cancer developed. Finally Pincus and Garcia[8] who used an estrogen-progesterone combination (Enovid) as an orally administered contraceptive found that, far from this contributing in any way to the occurrence of cervical cancer, in fact it actually afforded a protective action.

Since the ravages of hormonal depletion such as osteoporosis, skin and mucous membrane changes and cardiovascular disease may not make their presence known for several years after the menopause has set in, estrogen should be begun promptly with the onset of the menopause. Greenblatt has discussed how to avoid uterine bleeding during estrogen administration and what to do if it occurs. Essentially his method is to administer estrogens for three weeks and stop a week and continue it indefinitely.

L.H.N.

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McArdle's Syndrome

In 1951 McArdle of Guy's Hospital[1] described a disorder in a young man of thirty who after exercise suffered severe cramps and periodic myoglobinuria. At the same time he noted that the blood lactate and pyruvate levels did not rise. This meant to McArdle that the patient's intermittent claudication was due to the difficulty with which the glycogen in his muscles was broken down and that there was a defect of an enzymatic nature. Until that time almost the only known case of pain in working muscles was a deficiency in their blood supply. But this patient showed no such abnormality, in fact after exercise there occurred five fold increase in blood flow through the exercising muscles.

At the beginning and before the enzymatic nature of the defect was postulated, one of McArdle's associates[2] looked for psychological disturbances with hysterical manifestations to account for intermittent claudication in the absence of impaired blood flow. He was supported in this assumption by the docile way in which "Georgie", the patient, submitted to the intensive investigations over a period of three years. How else without hysteria could a patient endure being connected to a spirometer, with a plethysmograph on one arm, a urine bottle in the other and with needles in both veins and muscles?

But McArdle persisted despite the scepticism around him. Gradually it turned out that hysteria did not account for an inability of the muscles to break down glycogen to lactic acid. This has now been clarified as being due to an absence of muscle phosphorylase. The manner in which this has been decisively demonstrated by investigators in many centers is a true revelation of what we can expect from cytochemical studies in clarification of enzymatic defects at cellular and sub-cellular levels: In this case using muscle biopsy for demonstrating the presence or absence of phosphorylase.

As we reread McArdle's account of his studies on "Georgie", certain additional facts fit into a broad picture. For example, the observation that his patient after exercise exhibited a five-fold increase in blood flow together with a suppression of urine is striking. Obviously, it suggests that blood from the kidney is diverted into the general circulation to supply excess flow through the muscles. But here is the difficulty. Up to the present time we have believed that blood flow through a tissue especially muscle is regulated by release of metabolites locally in accordance with need for blood. We have glibly accepted that it is the lactic acid release and fall in pH locally which cause local vasodilatation. But here in McArdle's case, no increase in lactic acid occurs and no fall in pH follows exercise, but the local vasodilation is intense after exercise. Are there other metabolites that are liberated locally? Do sympathetic vasodilators in muscle function in high gear or what is the cause of the vasodilation in exercising muscles in this type of disorder?

It is obviously to the benefit of patients with this disease to maintain as great a flow of blood to muscles as possible since they cannot operate at anaerobic conditions in the absence of phosphorylase. This in fact was apparent in one of Tobin's patients[3] who could do intermittent work such as dancing but could not tense his muscles for a substained period. Sustained tension depends on glycolysis requiring phosphorylase while intermittent tension can be done with energy deriving from glucose oxidation not requiring phosphorylase. The purposive nature of intense vasodilatation in McArdle's disease is clear, its mechanism still requires further elucidation.

In treating the disease one thinks of giving glucose or fructose just before exercise and in fact these sugars do alleviate symptoms if given just prior to exercise. Likewise, any kind of muscle exercise requiring sustained contraction, like carrying a heavy object will not be tolerated well because this kind of muscle activity depends upon anaerobic glycolysis which cannot take place in the absence of the enzyme phosphorylase.

It is interesting to note from Tobin's studies that phosphorylase is not absent from the liver, heart, smooth muscle, red cell and brain cells. It is interesting to speculate about the meaning of this finding. One explanation immediately comes to hand, especially with regards the nerve cell. In early life during the period of active deposition of myelin, anaerobic glyoclysis is more active than respiration.[5] It follows that without phosphorylase, the nervous system could not form myelin and without myelin, the animal could not survive. A genetic defect producing absence of phosphorylase in the nervous system would promptly terminate survival.

McArdle's persistence in seeking an answer to a puzzle he saw in a patient who had muscle pain without circulatory impairment should make us all aware that his discovery was the result of an alert mind who believed in his observations though they seemed contrary to accepted ideas, who sought explanations for this observation by a carefully thought out series of clinical investigations. Finally, they culminated in the discovery of a new disease that itself opened up new vistas in physiology of muscular exercise.

L.H.N.

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The Laser In Biology And Medicine

The invention of the laser (light amplification by stimulated emission of radiation) has generated an enormous amount of activity within the scientific and technological community. At first the only wave lengths that were available were in the red and infra-red spectrum at low output per pulse. Then technological advances were being made at a rapid rate, power levels were increasing and wave lengths were getting shorter. Now lasers can deliver very high radiation focused so that the rays are parallel with almost no scatter over a distance of twenty miles. Tremendous energy fluxes can be produced and power densities many times that found at the surface of the sun can be acquired. It can pierce holes in all known materials. The narrow beam will probably make long distance ranging and signalling possible.[1]

As regards eye surgery the thermal effect is desirable for three clinical purposes.[2,3] The first is to produce a burn and scar to prevent retinal detachment which may come from a retinal hole or tear through which vitreous fluid seeps to produce separation of the retina from the pigment epithelial layer. Sealing the hole prevents detachment. A second use of the thermal insult is to destroy tumors of the retina and choroid. A third use of photocoagulation is to destroy a part of the iris of an eye in which the pupil or optical opening no longer exists. Thus far in over one hundred cases no major unfavorable incidents have occurred from the use of the laser.[3] Of course many more patients must be treated and studied for a much longer period before laser photocoagulation can be evaluated as an opthalmic therapy.

The actual amount of energy necessary to produce these surgical burns in the eye may vary with the amount of retinal pigment which appears to be a vital factor for the occurrence of retinal burns. This principle seems to operate also in the skin in which pigmentation results in burns because of absorption of the light by melanin.[4] In the absence of pigment then the heat energy is transmitted to

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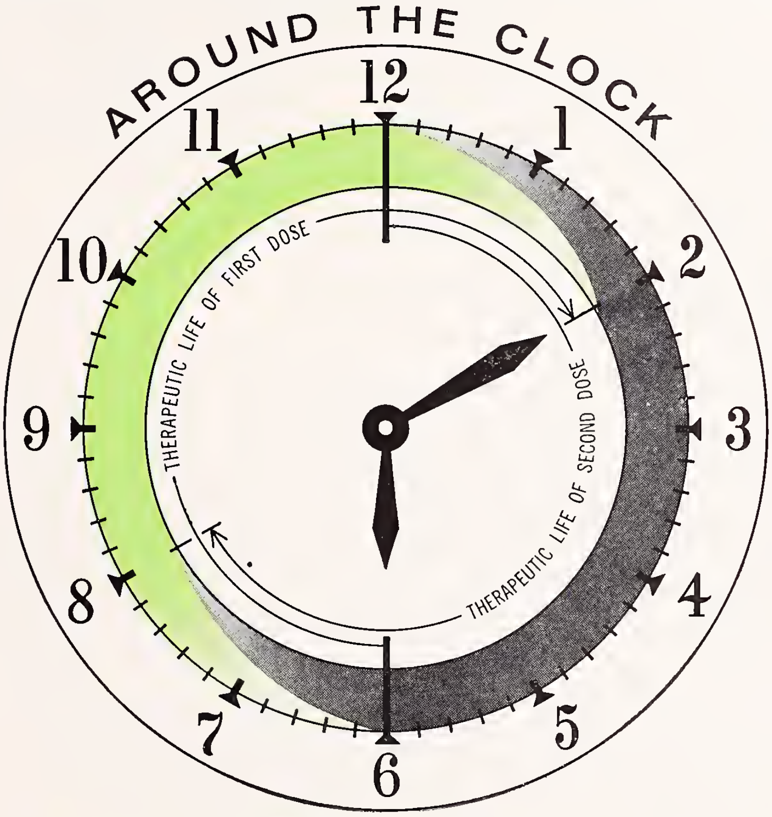
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the deeper layer and a much more severe burn is produced even though the superficial lesion is less striking.

Goldman[5] found various cellular aberrations in human skin chronically exposed to radiation which raises the possibility of the induction of malignancies. These cellular aberrations are also found in tissue culture. This means that we do not know what may be the potential carcinogenic effects of this new mode of delivery of high energy produced by light. Ketcham[6] calls attention to the cases of carcinoma of the cervix which appears again and again years after irradiation of the cervix. He has seen cancer of the neck years after thyroid treatment by radiation and cancer of the face years after irradiation of acne. Some of us are not too young to remember the fatal complications of the use of X-rays by physicians before the hazard of this modality was clearly established.

The importance of this warning lies in fact that it will not be long before every little hospital is going to have a laser just as they now feel it necessary to have a cobalt therapy machine, or a heart lung machine to carry on perfusion with some of the "magic" drugs that are supposedly tumoricidal.

Other biologic effects of lasers are coming to be recognized. Irradiation of gammaglobulin increased rather than decreased their antigenicity.[7] There must be innumerable other effects which are not yet dreamed of. Certain tissues and enzyme systems and organisms will be found to be much more sensitive to certain wave lengths than to others. We need to know what part of the cell or what cellular systems may be affected by each type of radiation. We already know that James green B dye enhances sensitivity to ruby laser radiations. What will other dyes do?

We already know of use of the laser in tumors of the eye. By using fiber optics one can imagine endoscopy being very much simplified. It may become possible to put the endoscope down the esophagus, into the bladder, up the rectum, into the peritoneal cavity or where ever it may be selectively used as a high energy source of light to either visualize or destroy small lesions. It is possible to foresee says Ketcham[6] putting a laser instrument into the lungs and treating metastases or into the peritoneal cavity to treat local metastases. But he goes on to say that there are many things that need to be learned beforehand. Will the tool be valuable in fulguration, can it be made into a cutting instrument?

When all is said and done about lasers in cancer surgery, Ketcham points out that seventy per cent of the patients he sees are those who would have run a high cure rate if the patient had had adequate treatment at the time of the original surgery. There is still need for early diagnosis and treatment and for proper use of proven therapy now already available to us. What is needed he goes on to say is continued investigation by everyone and "a guided suppression of our clinically oriented enthusiasm until this mode of therapy is more adequately investigated."

The last major area in which there is need for investigation is the study of transmission of laser radiation through tissues. All tissues are transparent in varying degrees to various portions of the electromagnetic spectrum. There is amply illustrated by the ordinary X-ray where bone is outlined as shadows while soft structures are more transparent. It is entirely feasible Litwin[1] points out for a high powered laser device to be used to take laser rays of the body much as we take X-rays today. This would be based on the same principle that is used in transillumination of the maxillary sinuses in a darkened room by insertion of an intense light in the mouth.

Remembering that although Roentgen gave his famous paper on the discovery of his new X-ray in 1895 and that we still do not know everything about its effects seventy years later, we must not make similar errors in the introduction of the laser into medicine. It is most important to study intensively the biologic effects of laser radiation to avoid the certain pitfalls facing us in its use. The conference held at the National Institute of Health shows the intense interest and scientific caution needed to clarify the dangers and uses of this powerful tool.[1]

Hopefully we will not repeat the mistakes we made with X-ray in the employment of the laser.

L.H.N.

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Drug Induced Liver Disease

Drug induced hepatic injury also associated with jaundice is becoming more frequent now that we are employing increasing numbers of potent drugs. The problem was relatively simple years ago when hepatic injury followed use of such hepatotoxins as carbon tetrachloride and ethyleneglucol which was used as a vehicle in early sulphonamide preparations. But then came intrahepatic cholestasis following use of such drugs as norethandrolone, methylestosterone and phenylbutazone as well as chlorpromazine. It thus became necessary to create a classification of drug induced hepatic injuries to assist the physician in the separation of cholestatic reactions with a good prognosis from hepatic reactions with much greater danger.

Such a classification has just been proposed by Popper et al.[1] on basis of a morphologic study of one hundred and fifty-five cases. Six suffered from intoxication with chemical agents not used as drugs; ten had been exposed to the anesthetic halothane; and one hundred and thirty-nine had a history of drug administration in the absence of any other agent deleterious to the liver.

The small group caused by such hepatotoxins as carbon tetrachloride, orthodibrobenzine and six mercaptopurine all showed hepatic cellular necrosis. The toxic reaction involved virtually every person exposed to the drug and was generally dose dependent. However, there could occur increased susceptibility in the presence of malnutrition, alcoholism or pregnancy. These drug effects are not limited to man but can be reproduced in most mammals. The clinical problem here is simple since it centers around the detection of exposure.

Besides chemically induced hepatoxic injury there were also patients with drug induced hepatitis without cholestasis. Among such drugs are perphenazine, aminosalycilic acid, oxyphenbutazone, chlorpromazine, dephenylhydantoin, tetracycline and even penicillin. In this group there occurs portal and periportal inflammation and pice-meal necrosis on the periphery of the lobule. Cholestasis was absent.

Another group Popper describes is the uncomplicated cholestasis caused by such drugs as norethandrolone, methyltestosterone, phenylbutazone and also chlorpromazine. Such patients develop jaundice but no injury to liver cells and the portal tracts were entirely uninvolved. The effects of such drugs usually result from interference with biliary secretion.

There was another group with drug induced hepatitis plus cholestasis caused by such diverse drugs as chlorpromazine, mepazine, tolbutamide, many tranquilizers, chlorpropamide, unidentified arsenicals and erythromycin estolate. In such patients, some showed signs of hypersensitivity reactions with parenchymal necrosis. This is an important finding since it suggests first a dual mechanism for the jaundice in which slightly damaged liver cells caused by a disturbance on the bile secretory apparatus (cholestasis) become a preferential target for an immunologic insult. Perhaps it is in such cases that the self-perpetuation of liver disease occurs (autoimmune disease).

Of the whole one hundred and fifty-five cases, sixty-one suffered from viral hepatitis showing intralobular necrosis of varying degrees. The majority also received a monoamine oxidase inhibitor and ten received halothane as an anesthetic. The fact that a monamine oxidase inhibitor can cause the same picture as viral hepatitis, makes it difficult to establish in any individual whether the hepatic injury or jaundice in the course of drug therapy is caused by the drug or by an intercurrent infection.

Several practical points should be kept in mind as a result of Popper's study. First of all, is the need to be alert to the possibility that drug therapy may produce liver disease because virtually every type of hepatic disorder may be caused by drug, and because discontinuation of therapy almost always terminates the disease. There are tragic examples of the violation of this principle in the reported fatalities in patients who continued to receive therapy with otherwise harmless anabolic steroids long after the onset of jaundice.

Second, it is necessary to keep in mind that drugs causing only a cholestatic reaction are far less objectionable than drugs which produce a viral-like hepatitis reaction since the latter are associated with a high mortality. Since cross reactions with even closely related drugs seem to be very rare, one need not fear substituting one drug for another.

Third is the recognition that laboratory screening to discover imminent reactions is of questionable value since the recognition of a cholestatic reaction does not indicate whether or not an added immunologic insult is pending. However, if pre-existing liver disease is present, then drug induced hepatic injury will further reduce functioning liver units and seriously prejudice the future of the patient.

From an academic as well as from a practical point of view, we need further clarification of the relation between the role of genetic defects in the toxicity of drugs and the hypersensitivity found in some instances of drug induced hepatic injury.

L.H.N.

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Potassium And Digitalis

The concept that there is "antagonism" between potassium and digitalis is firmly rooted in medical practice since Loewi in 1918[1] induced cardiac arrhythmias with strophanthin and showed that they could be antagonized by potassium. Following this lead, potassium salts were used therapeutically in man to abolish ventricular ectopic beats due to digitoxin.[2,3] But potassium infusion produces as well other than antiarrhythmic effects. Nahum and Hoff[4] showed that potassium also depresses the SA node, conduction over the atria, and AV block. Furthermore, even the antiarrhytmic effect of potassium is rather transient and when it is given rapidly (about 2.0 mEq. per minute for one to two minutes) it tends to prolong atrioventricular conduction.[5]

We have thus a peculiar situation in which potassium while antagonizing ectopic rhythms of digitalis also produces block just as digitalis does so that an additive effect of these two agents is not only possible but actually does occur. In view of the largely transient nature of the effect of potassium on ectopic arrhytmias and lack of any evidence that potassium counteracts any other of the digitalis effects on conduction in the heart, the concept that potassium and digitalis are really antagonists requires serious revision. This was made especially clear by Fisch, et. al's. studies in dogs in which the effect of potassium on atrioventricular conduction before and after administration of toxic doses of digitoxin. They found that digitoxin induced arrhythmias were suppressed promptly by potassium but with continuance of the infusion atrioventricular block followed. What was especially important from the clinical point of view was that the amount of potassium necessary to produce AV block was greatly reduced in all animals following administration of digitoxin.

The finding of AV block as a constant manifestation of experimentally induced hyperkalemia, first demonstrated by Nahum and Hoff in 1939, is rarely referred to in the literature although it is found with striking regularity. To be sure the rate of infusion is important for with slower rates, potassium can disappear by excretion while with higher rates one gets cardiac standstill. Fisch, et. al. observed sinoatrial arrest and sinoatrial block when potassium was given to digitalis poisoned animals. The ease with which spontaneous activity of normal pacemakers in the heart and spread of impulse transmission of the atrioventricular conduction system is depressed when potassium is administered to a digitalis poisoned dog can now be explained by the fact that both agents have similar effects on these structures.

The fact that potassium depresses AV conduction and that this depression is potentiated by digitoxin certainly has clinical significance in all these cases where digitalis poisoning occurs accidentally. If we forget that besides antiarrhythmic activity, potassium also depresses pacemaking and conduction in the heart there is always the possibility that it might be employed in cases of digitalis poisoning in which the drug has already depressed pacemaking and conduction.

McNamara, Brewer and Ferry[6] have recently reported a number of cases of accidental poisoning of infants and children by digitalis or by toddlers chewing plants whose leaves contain a cardiac glycoside. They also quote Sherman and Locke[7] that a neonate can be fatally poisoned transplancentally by the mother accidentally ingesting eight to nine mg. of digitoxin. In any case of digitalis poisoning, the management is primarily one of removal of the drug by gastric lavage, intravenous fluids and then treatment of any significant arrhythmia which can gravely prejudice cardiac output. However, the authors rightly point out that toxic doses of digitalis inhibit the transfer of potassium into the myocardial cell so that administering potassium will result in high concentrations of serum potassium and lead to myocardial depression. Clearly the routine administration of potassium especially by the intravenous route is inadvisable in digitalis poisoning. The way to combat depression of the conduction system in digitalis poisoning is by using sublingual isuprel or in extreme emergency, by the intravenous route, this being carried out while the system is being rid of the drug.

L.H.N.

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The Purple-People Syndrome

There are two recent reports of a newly recognized syndrome that occurs in psychiatric patients who have been given chlorpromazine in high doses for prolonged periods. Greiver and Berry[1] report twenty-one patients all women who exhibited a peculiar purplish-grey pigmentation of exposed skin areas, in twelve of whom, there was also corneal and lens opacities. Zelickson and Zeller[2] report eight patients who also showed progressive pigmentation of sun-exposed sites finally developing a blue-black or purplish-grey metallic color. The discoloration frequently first becomes apparent in summer but does not disappear in winter or after cessation of drug treatment. This purple-people syndrome was at first thought to occur only in women but more recently it has also been observed in male psychiatric patients. More than ninety patients with this syndrome have been observed at the Provincial Mental Hospital, Essondale, British Columbia.[3]

Since the introduction of chlorpromazine in 1953, it has become one of the most prominent and widely used drugs in psychiatry. It was recently estimated to have been the subject of ten thousand publications and to have been used in fifty million patients.[1] Now we are beginning to hear of its harmful side effects involving almost every system as well as the skin and there were twelve sudden deaths among the ninety at Essondale. Now that this complication has been brought to our attention, it seems likely that we will find it more and more as the use of the drug increases.

The restriction of pigmentation to areas of skin exposed to light suggests that the presence of a chlorpromazine metabolite which may have undergone light induced alteration is in some way responsible. The fact that the pigmented skin has an unusual purplish hue, means that the skin contains a purplish chlorpromazine metabolite in addition to ordinary Melanin. There are, of course, a large number of derivatives possible when chlorpromazine is metabolized. 7-hydroxychlorpromazine was recently identified as one of the metabolites excreated in the urine of persons receiving repeated doses of chlorpromazine. This turns rapidly purple, both in solutions and in paper chromatograms after brief exposure to sunlight and this in fact seems to be the metabolite in urine, liver and skin as demonstarted by Perry, et al.[3]

The corneal opacities and central stellate cataracts observed in many of the purple people might be explained by the action of ultraviolet light reaching the cornea and lens and effecting a chemical transformation of 7-hydroxy chlorpromazine or one of its derivatives. Perry also quotes a report of photosensitized keratitis in calves following the administration of phenothiazine as an antihelminthic.

Only a minority of mental patients receiving chlorpromazine develop this toxic syndrome and the incidence varies from one mental institution to another. What is yet to be determined is the relation to dosage, duration of therapy, amount of exposure to light, sex, and variations in the metabolism of chlorpromazine from one patient to the next. Furthermore, the possibility that phenothiazine tranquillizers other than chlorpromazine may also give rise to photosensitive skin pigmentation and eye changes, also needs to be explored.

Several practical measures to prevent the syndrome suggest themselves. Perhaps chemical substitution at the 7 position of the phenothiazine ring might do it but we do not know if such a compound would lose its ataractic properties. It might also be wise for patients requiring large doses of chlorpromazine over long periods to wear dark glasses and not be permitted to go outdoors. Perhaps special window glass which admits a minimum of ultra-violet light might be installed in the wards of mental institutions. But, of course, most important is the need for periodically reviewing and very critically too, the clinical indications for long term administration of tranquillizers to psychiatric patients.

L.H.N.

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Put The Putty To It

This expression, heard in wrestling circles, like many others, calls for that extra ounce of effort that can result in success measurable in geometric rather than arithmetic terms. One medical parameter which is expected to be most fruitful in the near future is the sphere of knowledge of the events surrounding the process of being born. Unlike many others, this sphere is truly multidiscipline, requiring the combined efforts of obstetricians, anesthesiologists, pediatricians and a host of ancillary personnel.

A decade ago, the work of Apgar and her Columbia associates, and many others, stimulated the increasing awareness of the physiological, biochemical and pathological processes associated with parturition and the neonatal period. Perhaps the greatest single difficulty in perinatal investigation has been the inability to obtain truly physiological blood samples from the human fetus. Hopefully, the Saling method of obtaining fetal scalp blood, which is both safe and ethical, will begin to resolve this problem.

The next decade extends promise of great advances in the knowledge of prenatal care, labor, anesthesia, delivery and intensified care of the newborn infant, in addition to opening new areas of investigation such as experimental teratology. Support by, and grants-in-aid from, national and federal institutions, and the concentrated, multidiscipline approach of facilities as are currently being planned at the Yale-New Haven Medical Center, will expedite the acquisition of this knowledge.

Few areas are so potentially rewarding as the perinatal sphere, because (and not to detract one iota from the magnificent accomplishments of the cardiovascular surgeons) the reward is not measured in terms of "new lamps for old" (plastic heart valves and aortas; less diseased kidneys and lungs), but in the rescue of endangered, but, *normal* human protoplasm.

The time has come to "put the putty to it".

Frederick W. Hehre, M.D.

Immunologic, Bioassay And Hormone Pregnancy Tests

Pregnosticon (Organon), UCG-Test (Wampole Lab.), Immuno-Plate Pregnancy Test (IPT—Hyland) and Graxindex (Ortho) are kits employing immunologic tests for rapid diagnosis of pregnancy. All are based on an agglutination reaction between human chorionic gonadotropin (HCG) and HCG antibodies produced in sensitized rabbits; HCG is present in the urine of pregnant women beginning about the 26th day after the last menstrual period. The Gravindex test is performed on a slide and gives a result in three to five minutes; the other tests require the use of test tubes and take two hours or more.

The Agglutination Reaction—When rabbit serum containing HCG antibodies is mixed with the urine of a pregnant woman, the HCG in the urine combines with and neutralizes the antibodies. When the serum-urine combination is then mixed with sheep red blood cells or latex particles (as in Gravindex) coated with HCG, there are too few antibodies left to proluce agglutination of the particles. Inhibition of agglutination indicates pregnancy.

Bioassay Tests—Though the accuracy of bioassay pregnancy tests has been generally good, the time required for the test, the cost of maintaining adequate animal colonies, and the seasonal variability of animal sensitivity are disadvantages. The rat ovary hyperemia test now used in many large hospital laboratories gives results in six hours, however, and may be superior to other tests for quantitative determination of chorionic gonadotropin. Quantitative information is useful in the diagnoses of hydatidiform mole and choriocarcinoma, where urine levels of HCG may be very high; it is also useful in threatened or missed abortion and in ectopic pregnancy where HCG urine levels may be low.

Comparative Reliability—The agglutination tests and the bioassay tests have been compared for reliability in a number of studies. In one of the largest of these, W. A. Barr (J. Obstet. Gynaec. Brit. Comm., 70:551, 1963) compared an immunologic test with the toad (Hogben) test; there were 2.3 per cent false positives and 0.2 per cent false negatives in 1634 immunologic tests; there were no false positives and 0.6 per cent false negatives in 1690 toad tests. In other studies, both agglutination tests and bioassay tests have given positive readings in from about 90 per cent to 100 per cent of uncomplicated pregnancies by about the 10th day after the missed menses, or about the 40th day after the beginning of the last menses. In general, however, false-negative results appear to be more frequent in bioassay tests, and false positives perhaps more frequent in immunologic tests. With both tests, false-negative results are less likely to occur if the urine is tested no earlier than the 40th day after the beginning of the last menstrual period. The frequency of false-negative results with the immunologic test can be further reduced by using a concentrated urine with a specific gravity of more than 1.015; filtering urine with much albumin or many cells will decrease the frequency of false-positive results. At the menopause, the amount of luteinizing excreted by the non-pregnant woman may be high enough to produce false-positive reactions in the agglutination tests.

The effect of a variety of medications on the Pregnosticon test has been reported by E. M. Shuttleworth (Lancet, 2:699, 1963) and on the Gravindex test by L. Lang (Amer. J. Med. Techn., 30:345, Sept.-Oct. 1964). Neither found interference with the accuracy of the test in patients receiving usual doses of salicylates, barbiturates and other common drugs.

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Alcohol Addiction Traced To Cells

If sick cells make sick people, then alcoholism has to be classified as a cause of physical sickness as well as a sign of psychological illness, a noted specialist reported today.

In an interview in the recent issue of Today's Health, published by the American Medical Association, Marvin A. Block, M.D., pointed out that alcohol, unlike most things we eat and drink, has the ability to cause cell changes, particularly in the brain.

The result, says Dr. Block, is that after prolonged dousing with alcohol the chemistry of brain cells is so altered that alcohol becomes a necessity for cell function.

In other words the heavy drinker who starts out looking for escape or courage in a bottle may windup needing alcohol for his brain cells just as a diabetic needs insulin injections for the sugar-using cells of his body.

Dr. Block, former chairman of the AMA's Committee on Alcoholism and current vice-president of the National Council on Alcoholism, says the thing that distinguishes the alcoholic from the social drinker is control.

"The social drinker," he said, "is an individual who uses alcohol with control. He can stop any time he decides.

"The alcoholic has lost control and if he starts to drink he cannot control his drinking."

Loss of control, he pointed out, stems from the fact that alcohol is not just a drink it is a drug—an anesthetizing, addicting drug like narcotics.

"We don't understand the exact causes of loss of control with alcohol any more than we understand the loss of control in narcotic addicts," he said.

"We do know that the protoplasm of the cells—particularly the brain cells—is affected by chemicals introduced, whether alcohol, barbiturates or other drugs."

If the use of such drugs continues, he said, the cells soon develop a tolerance for the drug.

And after tolerance is established "the cell proceeds to develop a necessity for having the drug present in order to function. We now have physiological or physical dependence."

When alcohol, narcotics or other addictive drugs, upon which the cells have become dependent, are suddenly withdrawn the cells must reorganize their way of life, much as they did in becoming addicted. The strain, however, is greater.

"The cell may undergo something comparable to a convulsion in order to accommodate itself to functioning without the drug upon which it has become dependent," Dr. Block said.

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*Swartz, C., et al.: Circulation 28:1042, 1963.

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Peritoneal Dialysis

Some Experiences Of A Community Hospital

Karl C. Suerig, M.D.

Introduction

■ In recent years peritoneal dialysis has enjoyed increasing popularity as an effective means of removing dialyzable substances from the body. This procedure has been applied to a wide variety of problems and new uses are being reported. Since the introduction of commercially prepared solutions and catheters the procedure has become relatively simple and safe.

Peritoneal dialysis is approximately one-fourth as efficient as hemodialysis; however, it has the advantages of being more rapidly instituted, requires no blood, does not necessitate the use of anticoagulants, may be performed by any physician with the help of competent nurses, and is more conveniently adapted to prolonged use. The procedure provides a more gradual correction of fluid compartment abnormalities and easily sustains these corrections. The surface area of the peritoneum is comparable to the calculated filtering surfaces of the glomeruli and dialysis, through the peritoneal membrane, can supplant renal function. This is especially useful for problems that cannot be handled by hemodialysis, i.e., children under twenty-four months or in cardiovascular collapse, and in areas where hemodialysis is not readily available.

It is the purpose of this communication to report a number of unusual experiences with this procedure in a community hospital of 250 beds, to discuss the diversity of its application and to encourage its widespread use. The procedure itself has been adequately discussed in the literature and will not be dealt with except where minor variations were found helpful.

Investigations of the exchange of substances in serous cavities were reported by Starling and Tubby in 1894.[1] In 1923 Putnam[2] performed more extensive studies on the peritoneum as a dialyzing membrane and showed that substances could be removed from the body and osmotic equilibrium achieved. Dialysis of substances from the blood was first performed in 1914 by Abel, et al,[3] using extracorpeal circulation through a dialyzing device. The first clinical application of peritoneal dialysis was performed on three patients by Ganter in 1923.[4]

The use of peritoneal lavage was only occasionally reported[5-7] until 1946 when Fine, Frank and Seligman[8-10] performed their extensive investigations. This encouraged the use of the process[11-18] so that by 1950 Odel, et al,[19] were able to collect 101 cases from the literature. The technique used most often today of intermittent peritoneal dialysis through a single catheter, introduced with a trocar, was introduced in 1951 by Grollman, Turner and McLean.[20] More recently Maxwell,[21] Burns,[22] Doolan,[23] their associates, and Boen[24] have comprehensively outlined the technique, applications and physiological kinetics of the procedure.

The earlier complications of overhydration, infection, vascular collapse, inadequate catheters and difficulty in removing the dialyzing fluid have been minimized if not eliminated by improvements in equipment, techniques and a better understanding of fluid and electrolyte problems.

Peritonal dialysis has been used for varied lengths of time in a variety of kidney disorders for the removal of dialyzable exogenous and endogenous toxic materials and for the correction of various electrolyte abnormalities in all age groups. The cases presented here demonstrate some unusual aspects of the use of peritoneal dialysis and describe a few of the experiences encountered in a community hospital.

Case 1

H. N. (GHA-10-15-06), a 57 year old man with chronic glomerulonephritis, was admitted on November 26, 1962. He was known to have progressive renal disease for 16 years and associated with hypertension, anemia, hypoproteinemia and azotemia.

Upon admission he was confused and disoriented with dependent and pulmonary edema. His initial blood pressure was 220/120. The blood urea nitrogen was 140 mg per cent, calcium 6.8 mg per cent, phosphorus 10.4 mg per cent, sodium 134 mEq/liter, chloride 94 mEq/liter, potassium 4.4 mEq/liter, carbon dioxide 20.4 mEq/liter and serum albumin of 2.1 gm per cent. The hemoglobin was 8.2 gm and the hemotocrite 25 per cent. The urinary output varied between 700 and 1200 cc per 24 hours and gave a 3+ test for protein. The patient

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DR. KARL C. SUERIG, formerly medical resident, Greenwich Hospital, Greenwich, Connecticut; presently Medical Officer, United States Naval Reserve.

was treated conservatively for 4 days with a loss of edema but otherwise no improvement. On November 30, he had three generalized convulsions with a blood pressure increase to over 300/150. His condition deteriorated to a semi-comatose state and he developed bilateral extensor plantar reflexes. Peritoneal dialysis was initiated at this point and continued at intervals for thirty days. The patient gradually improved during this time, and he was given supplimental calcium and blood transfusions. The blood urea nitrogen was maintained between 30 and 70 mg per cent and his blood pressure remained in the 180/110 range. On December 27 he was transferred to Peter Brent Brigham Hospital, Boston, Massachusetts, where a plastic conduit was placed in the abdominal wall. With the conduit in place he was able to return home and perform continuous peritoneal dialysis as an outpatient. He was ambulatory with a clear sensorium; however, the hypertension persisted. He expired approximately one year later.

Case 2

A. C. (GHA 8-15-81), a 65 year old woman, was admitted to the hospital on June 2, 1962 following an automobile accident. She had a mastoidectomy performed in 1948, the specimen of which revealed granulomatous lesions reported to resemble eosinophilic granuloma. In 1952 a splenectomy and liver biopsy was performed for hepatosplenomegaly and "hemolytic anemia". These specimens also contained nonspecific granulomatous lesions. In 1955 she had a myocardial infarction complicated by a cerebral embolism. Pulmonary infiltrations were noted on X-ray and progressive renal disease with albuminuria and azotemia developed in the ensuing years.

There were no serious traumatic injuries noted upon admission. However, cardiac decompensation and uremia became severe. Her cardiac status improved with increased digitalis therapy; but, her sensorium deteriorated to a semicomatose state accompanied by nausea and vomiting. The blood urea nitrogen was 120 mg per cent, increasing to 160 mg per cent by June 5. The serum calcium was 6.0 mg per cent, phosphorus 7.0 my per cent, sodium 143 mEq/liter, potassium 3.6 mEq/liter, chloride 92 mEq/liter, carbon dioxide 27 mEq/liter. Her blood pressure was 132/88.

On June 5, peritoneal dialysis was started and was continued for six days. Diuresis began on the third day of dialysis. When dialysis was stopped the electrolytes were normal, the blood urea nitrogen was 33 mg per cent and the patient was oriented and ambulatory. She was discharged on July 16, and returned to her activities as a housewife.

Eighteen months later, on November 8, 1963, the patient was readmitted with severe cardiac decompensation and uremia. The blood urea nitrogen which had been in the 80 to 90 mg per cent range at home was now 130 mg per cent. Despite varied therapeutic attempts, including peritoneal dialysis, the patient expired on November 13. Permission for autopsy could not be obtained.

Case 3

S. M. (GHA 9-93-58), a 37 year old woman, was admitted to the emergency ward on December 17, 1961, in coma. The patient was known to have a personality disorder and had attempted suicide previously. She was deeply comatosed, totally areflexic, apneic, cyanotic and in shock. Resuscitation in the emergency ward by intubation, oxygen administration and vasopresser drugs was instituted. She was placed in a tank respirator and gastric lavage performed. Available history at this time indicated the possible ingestion of barbiturates, A.S.A. and Codeine Compound^R, hydroxyzine, meprobamate and Fiorinal^R in unknown quantities. Peritoneal dialysis was started through the access holes of the respirator. Being a very thin woman, two liters of dialyzing fluid was introduced through a number 13 needle into the abdomen while preparing for the trocar insertion. Dialysis was performed continuously for 48 hours, during which time the patient slowly regained reflexes and respirations. When she regained consciousness a history of ingestion of 50 or more 100 mg secobarbital capsules was obtained. The patient was discharged ten days after admission.

Eight months later, on August 20, 1962, the patient was readmitted under similar circumstances. Again she was comatose, areflexic, apneic and in cardiovascular collapse. As before no accurate history could be obtained concerning the type or quantity of drugs ingested. Initial treatment was similar to the previous admission. Peritoneal dialysis was started while the patient was in a tank respirator. This time the linea alba was grasped with two Kocher clamps, approximately one inch apart, and the abdomen "tented up" by an assistant while the trocar was introduced between the clamps. Dialysis was continued for 36 hours during which the patient slowly regained consciousness and physiological function. Aspiration pneumonia was noted the day following admission and was treated with antibiotics and high doses of steroids (which were tapered over a two week period). A history of barbiturate, meprobamate and Librium^R ingestion was obtained after she regained consciousness. Following several courses of electroshock therapy she was transferred to a psychiatric hospital.

Case 4

S. K. (GHA 10-20-18), a 27 year old woman, was brought to the hospital in a semistuperous condition stating she had taken 20 glutethimide (Doriden^R) tablets. Shortly after admission she became deeply comatose and peritoneal dialysis was started. Six hours after admission she regained consciousness, was fully reactive and able to speak. Dialysis was stopped, but the catheter left in place because of the "rebound" frequently encountered with glutethimide intoxication. Fourteen hours after admission the patient rapidly became comatose again, responding only to painful stimuli. Dialysis was reinstituted. Her condition remained the same until she expired 45 hours after admission. Examination of the dialysis fluid charts revealed a negative balance of 1200 cc of dialysis fluid in the three hours before death. Postmortem examination revealed massive hydrothorax with complete atelectasis of the lungs and cerebral edema. The diaphram and its serous surfaces were intact; however, marked edema of the subcutaneous tissues in the area of the ensiform cartilage was noted. This was presumed to be the route of fluid transfer into the pleural cavities.

Case 5

M. B. (GHA 10-40-40), a 73 year old woman, was admitted to the hospital for cardiac decompensation. In the four days following admission the patient became progressively more cyanotic and urinary output decreased to 50 cc per 24 hours. She became hypochloremic (chloride 92 mEq/liter), hypokalemic (potassium 3.1 mEq/liter), and began to hemolyze red blood cells. At this time auricular fibrillation was noted and the liver was more enlarged. Many rales were heard bilaterally and pulmonary infiltrates were noted on X-ray. Peritoneal dialysis was started on the fourth hospital-day. Five liters of body fluid were removed by intermittent use of hypertonic dialyzing fluid during the first 36 hours. Serum electrolytes were within normal limits after 24 hours of dialysis and urinary output increased to 400 cc per 24 hours. Cyanosis progressed to a violaceous hue, hemolysis continued and the patient expired on the sixth hospital-day. Postmortem examination revealed massive emboli in both main pulmonary arteries arising from the right auricular appendage. Right heart dilitation and hypertrophy with chronic passive congestion of the liver, lungs, kidneys and adrenals were noted. There was a small pleural effusion and ascites present.

Case 6

B. B. (GHA 2-67-14), a 78 year old obese woman with a history of poorly controlled diabetes for 25 years, was admitted to the hospital because of gangrene of the left foot. Preoperatively the patient was digitalized for mild symptoms of cardiac decompensation and her diabetes was controlled with regular insulin. A mid-thigh amputation was performed on the patient on the tenth hospital-day. During the first ten postoperative days the patient became progressively oliguric with a rising blood urea nitrogen. The diabetes became uncontrollable to the point of severe acidosis with acetonemia, associated with serum electrolyte abnormalities. Peritoneal dialysis was started on the twelfth postoperative day. Considerable difficulty with drainage of the fluid was encountered and subcutaneous edema around the catheter developed. Because of the patient's extreme obesity there was some question as to the exact position of the catheter. Water soluble radioopaque material was introduced through the catheter demonstrating extravisation into the subcutaneous tissue as well as the peritoneal cavity on X-ray. The catheter was advanced to below the skin resulting in an improved technical function of the dialysis. The acidosis was rapidly controlled and electrolytes were normal after 48 hours of dialysis. Renal function did not return and dialysis was continued until her demise eight days after dialysis had begun. Postmortem examination demonstrated generalized arteriosclerosis with a myocardial infarction and an infarct of the right kidney. Pulmonary edema and a bilateral hydrothorax were also present.

Discussion

Peritoneal dialysis can be performed by any physician who is experienced in performing paracenteses and the procedure can be monitored by the nursing staff. We have used a large catheter which was introduced by Doolan, et al,[23] that is serated for flexibility with recessed holes to prevent obstruction by bowel and omentum. At several postmortem examinations the omentum has been found to be wrapped around the catheters, obstructing the egress of fluid from the peritoneal cavity. This problem has been minimized with this catheter.

The catheter is introduced in the midline below the umbilicus after catheterization to ensure total evacuation of the bladder. In extremely thin individuals it is helpful to place one to two liters of dialyzing fluid into the peritoneal cavity through a needle prior to the introduction of the trocar as suggested by Barry, et al.[25] Another method of releaving the apprehension of bowel or vascular perforation in thin individuals, is to place two Kocher clamps on the linea alba and have an assistant "tent up" the abdominal wall as the trocar is introduced between the clamps. Occasionally, in extremely obese or postoperative patients it is desirable to know the exact location of the catheter, especially if recoverey of the dialyzing fluid is prolonged. Radioopaque solution introduced through the catheter will enable X-ray visualization of the catheter and will show where the solution is being placed. It should be emphasized that the catheter should not be prematurely removed. It may be left in place for prolonged periods of time (one month and more) without harmful sequela. The catheter should be irrigated with heparin and/or steroid preparations in order to prevent fibrosis and fibrin accumulation.[34]

The commercially available solutions are prepared with 1.5 per cent and 7 per cent dextrose. The hypertonic solution is useful for the removal of body fluid in edematous states.[27] A mixture of one liter of each of these solutions probably decreases the possibility of vascular collapse due to excessively rapid removal of extracellular fluid. The mixture can remove from 200 to 500 cc of body fluid per hour.

Antibiotics, heparin, potassium, sodium bicarbonate, local anesthetics and albumin may be added to these solutions to ward off complications and correct individual electrolyte or toxic problems.

Acute renal failure, of any etiology, has always been a challenge to a physician's ingenuity. Conventional, conservative treatment of this problem is difficult and uncomfortable at best. Dialysis has decreased many of the problems involved in this disorder. If started sufficiently early, before severe symptoms and electrolyte abnormalities develop, patients may be given a more diverse diet, be kept partially ambulatory (decreasing the complications of bedridden patients) and kept in a state of more physiological fluid and electrolyte balance. Early institution of dialysis has been emphasized and encouraged to help prevent the complications of renal failure.[28, 29] This procedure greatly adds to the anuric patient's comfort and makes their management less difficult. Edema is relatively easily removed by the use of hypertonic solutions, therefore making the patient's diet more palatable with the use of salt. With sterile precautions the catheter may be left in place for prolonged periods of time.

The treatment of chronic renal disease by renal transplantation and prolonged dialysis is now being undertaken in many medical centers. The outlook on this problem has changed from one of frustration to hope for prolongation of life. As in Case 2, occasional long remissions occur following treatment for acute episodes of chronic renal disorders.

A variety of methods for prolonged peritoneal dialysis, which may be carried out on an outpatient basis, have been devised. Waugh[30] used a skin "plug" through which a catheter was periodically introduced. Gutch, et al,[31] employed a tapered polyvinal catheter made from a Travanol vessel cannula which is soft and flexible. Indwelling plastic conduits, through which the catheter may be periodically introduced into the peritoneal cavity, have also been devised.[32-36] These require surgical installation and have been complicated by infection, fibrosis and perforation of bowel. Barry, et al,[25] developed a conduit which can be introduced through a trocar. It has an inflatable balloon which is inflated in the peritoneal cavity and a plexiglass disc on the skin for counterpressure, thus eliminating a surgical procedure in chronically ill patients. Automatic cycling equipment has been constructed for peritoneal dialysis which decreases cost and nursing care.[32]

Although peritoneal dialysis will substitute for functioning kidneys some abnormalities are unaffected. The hypertension and anemia of renal failure do not respond to dialysis. Care must be taken that medications will be removed by dialysis and not accumulate to toxic concentrations. Should the present difficulties associated with organ transplantation be solved, dialysis will be extremely useful as a temporary measure to prepare patients for surgery.

The major complications reported to accompany prolonged peritoneal dialysis are fibrosis of the cannula, perforation of bowel and infection.[33,34] Problems encountered with prolonged hemodialysis include anemia (requiring two to four units of blood per week), peripheral neuropathy, hypertension, hyperkalemia, bone demineralization, metastatic calcium deposition and transfusion reactions.[37,38] Neuropsychiatric and rehabilitation problems are common to both procedures.

Reports on the use of peritoneal dialysis for exogenous and endogenous intoxications have been multiple and varied. On many occasions an accurate history of the quantity and type of medication taken is difficult or impossible to obtain when a comatose patient is brought to the hospital. If drug intoxication is established, we feel that early institution of dialysis for patients whose condition is worsening, decreases the incidence of death and complications. The risk of complications of dialysis are less than those peculiar to the areflexic, comatose patient with depressed respirations; therefore, this procedure should be encouraged despite the fact that more dialyses than necessary will be performed.

Barbiturate intoxication is probably the most common overdosage seen by the physicians in emergency wards. Berman and Vogelsang[39] have shown that the addition of albumin to the dialyzing fluid will increase its removal by 42 to 140 per cent. When albumin is used the solution should be left in the peritoneal cavity for 90 to 120 minutes. Mannitol diuresis will increase renal elimination of barbiturates[40] (and other substances) and should be considered as an adjunct to peritoneal dialysis.

Glutethimide poisoning presents many unique problems. Gastric absorption is irregular and the drug is excreted in the biliary tract, 85 per cent being recoverable from a bilious fistula. Recirculation via biliary secretion and intestinal reabsorption causes prolonged toxicity with cyclic changes in the clinical state of the patient.[41,42] The drug may be removed 100 to 400 times more rapidly by hemodialysis than by the normal kidney and provides a useful adjunct for treatment of severe intoxications.[43,44] Few reports have been made concerning the use of peritoneal dialysis for this problem.[45,46] Our experiences on several occasions with peritoneal dialysis for glutethimide intoxication has been universally poor and probably has no use in the management of these patients.

Salicylate intoxication has also been treated by peritoneal dialysis with good results.[47,48,56] Here too the addition of albumin to the dialysis solution significantly increases the removal rate.[49,50]

The treatment of choice for drug intoxication is hemodialysis or forced osmotic diuresis; however, peritoneal dialysis should be held in deference for the special situations to which it is suited.

Other exogenous intoxications for which peritoneal dialysis has proved useful include methyl alcohol,[51] boric acid,[52,56] salt,[53] and bromide poisoning.[54] This method may be readily used in infants on whom hemodialysis cannot be performed.[55,56]

Successful treatment of uric acid nephorophathy with this method has been reported by Duke[57] and Barry, et al.[58] They showed that large quantities of uric acid could be removed and renal function reestablished.

As in Case 6, the diabetic patient frequently presents multiple problems. Diabetic acidosis itself, however, is at times unresponsive to the usual therapy and requires more aggressive treatment. Several investigations have reported the use of peritoneal dialysis in a number of patients with severe diabetic acidosis with very favorable results.[59,60]

Case reports of treatment of toxemia of pregnancy by peritoneal dialysis with beneficial results have been made.[9,11,60,61] Dialysis was performed postpartum and it is difficult to determine, from these few cases, if the procedure had any actual role in the patient's outcome. Further investigation would be of interest and may be of value in determining the etiology of this disorder, since the dialyzing fluid is readily available for anlysis. Equally curious are the results obtained from dialysis (hemodialysis) of patients with myesthenia gravis.[62]

The correction of the electrolyte abnormalities in a patient with pulmonary embolism by peritoneal dialysis, to our knowledge, has not been previously reported. Significant clinical improvement was noted during dialysis; however, the massive occlusion of the pulmonary arteries proved overwhelming.

Electrolyte abnormalities in a brain-injured patient have also been treated by this technique.[63] Little is known of the cerebral mechanisms of electrolyte balance. Electrolyte balance is frequently difficult, if not impossible, to maintain in these patients. The steady prolonged control possible with dialysis will ease many apprehensions and difficulties encountered by the physician.

Peritoneal dialysis is useful in the management of liver disease, especially when complicated by the "hepato-renal syndrome".[21, 64] Blood ammonia levels can be effectively lowered by this method. The addition of albumin to the solution will remove 25 times more bilirubin than regular solutions.[65] Although bilirubin per se has little harmful effect in the adult, other substances which are "protein bound" and removable by the use of albumin may also be eliminated at the same time. Lieberman and Kutzenstein[66] dialyzed a premature infant, with no technical difficulty, who had hyperbilirubinemia. This may well prove to be of value in infants in whom exchange transfusion is a problem.

Excess body fluid is effectively and rapidly removed by the use of hypertonic solutions.[21, 22, 27, 31] In situations where diuretic medications are not effective, or when renal function is suppressed, large amounts of fluid may be removed via the peritoneum. This is especially useful for it also controls the usual associated electrolyte abnormalities. A mixture of the 1.5 per cent and 7 per cent dextrose solutions is suggested because the 7 per cent dextrose solution may remove extracellular fluid so rapidly as to cause vascular collapse. It is also advisable to have a vein "open" during this mode of therapy so that this hazard and the rapid fluid shifts may be corrected. Following the removal of excess fluid and the correction of the edematous state, two or three dialyses with "isotonic" solution are advisable to avoid the possibility of overcorrection. When the electrolyte abnormalities are corrected diuresis often occurs. Diuretic therapy may again be effective provided sufficient renal function exists.

Postoperative patients present no contraindication to peritoneal dialysis, which greatly simplifies the difficult problem of oliguria or anuria in these patients. The catheter may be put in place in the operating room or introduced in the usual manner as necessary. Leakage of fluid through the wound is an annoyance; however, this neither decreases the overall efficiency of the procedure, nor does it delay healing. Localized edema has been noted in operative areas, especially if tissue is not "peritonealized".[22, 61]

Bacterial or chemical peritonitis also offers no contraindication to peritoneal dialysis. Lavage of the cavity may indeed be beneficial by physical removal of contaminants and it provides a vehicle for local antibiotic treatment in conjunction with systemic administration.[22, 67] Care should be taken to avoid those antibiotics reported to cause hypotention when instilled into the peritoneal cavity.

The frequent minor complication of abdominal pain, leakage of fluid around the catheter, difficulty with removal of the dialyzing fluid and minor bleeding seldom impinge on the efficiency of the procedure. Replacement of the catheter may be necessary if the perforations are blocked by fibrin or abdominal contents. The gut or omentum may become wrapped around the catheter and produce a check valve effect, allowing fluid to readily enter the cavity but blocking its exit. Blood tinging of the dialysis fluid usually stops after the first two to three cycles. If it continues it is usually controlled by placing deep mattress sutures above the catheter and below it. Perforation of major blood vessels has not been reported; however, it is a distinct possibility.

Protein loss via the peritoneum is usually insignificant but may be as great as 20 to 30 gm per 24 hours. However, if the serum proteins are low in a chronically ill patient this has been reported to cause hypoproteinemic edema. Alkalosis, presumably due to the high bicarbonate concentration of commercially prepared solutions (45 mg per liter), has also been reported after prolonged use. This was corrected by temporary discontinuance of the dialysis. Failure to metabolize the lactate present in the solutions may enhance acidosis in patients with hepatic disease. This may be corrected by intervenous bicarbonate administration.[22, 24]

Hydrothorax has been noted frequently at postmortem examination but seldom amounts to more than 200 cc. The massive bilateral hydrothorax noted in Case 4, which was a major cause of death, has, to my knowledge, not been previously reported. The diaphram and its pleural and peritoneal surfaces were intact; however, marked edema of the subcutaneous tissues in the area of the ensiform cartilage was noted and is presumed to be the channel of egress of fluid from the peritoneal to the pleural cavities. The fluid must have collected in the pleural cavity in a short time because it went unnoticed by the attending physicians. I can offer no adequate explanation for this large, rapid accumulation of fluid.

Ganter,[4] the first to attempt clinical dialysis through living membranes, made use of the pleural cavity in one patient to instill the fluid. Mandelbaum and Shumacker[68] have recently shown experimentally that the pleural cavity is as effective as the peritoneal for dialysis in dogs. In selected patients, whose peritoneal cavity is inaccessable because of tumor, adhesions or other problems, and in whom peritoneal dialysis is deemed necessary, use of the pleural cavities should be considered.

Peritoneal dialysis is a procedure with wide application that is simple, safe and effective. It is a slower process than hemodialysis but has several distinct advantages. Its uses are protean and should be a familiar technique to all physicians. Peritoneal dialysis slowly corrects and maintains fluid and electrolyte abnormalities and effectively removes endogenous and exogenous materials that are diffusable.

This correspondence has not dwelt on the techniques of the procedure because they have been discussed thoroughly in the literature. An attempt was made to emphasize the many problems for which it may be applied effectively and to present a few of the experiences obtained in a community hospital, some of which have not been previously reported.

Summary

Peritoneal dialysis is now a relatively simple, safe and efficient procedure with wide application. This procedure should be familiar to all physicians and its more frequent use is encouraged. Fluids, electrolytes and metabolic abnormalities as well as some exogenous and endogenous intoxications may be effectively treated with this procedure.

A few unusual experiences obtained in a community hospital are presented.

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Pseudomalignant Lesions Of The Skin And Subcutaneous Tissue

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Synopsis

In 1955, the senior author had a resection of a cherry-sized soft tumor of the subcutaneous tissues of his lateral chest wall. He was told that it proved on microscopic examination to be a sarcoma. When the feared recurrence or metastases failed to appear over the ensuing years, and after he had seen references to a pseudosarcomatous lesion, he hopefully asked his surgeon to review his case in 1963. The surgeon brought the slides to the junior author, who said the lesion was entirely benign, and then, noting the date on the slide, remarked that it had undoubtedly been called a sarcoma at the time of original examination. Other pathologists concurred in the diagnosis of benign nodular fasciitis. The marked change in pathological interpretation of the same lesion in such a short period of time stimulated this report on nodular fasciitis, juvenile melanoma, and keratoacanthoma.

Nodular Fasciitis

This section of our paper is concerned with a lesion which we think is best termed nodular fasciitis. It has also been called subcutaneous fibromatosis, subcutaneous fasciitis, and pseudosarcomatous fasciitis. The condition was first recorded as a clinical entity in 1955 by Konwaler et al.,[1] who emphasized that it is a benign lesion that is often confused with sarcoma. However, these authors indicate that the benign behavior of this malignant-looking lesion had previously been recognized by Klemperer, and Stewart, of New York, and by Budd, of Los Angeles, who had seen a few cases but had not published reports of their experience.

Stout,[2,3] who has had great experience with neoplasms, has called attention to the difficulty in making accurate diagnosis of tumors of the connective tissue on histologic appearance alone. Stout is very well acquainted with this lesion, and he has recommended that the condition not be called subcutaneous fasciitis, because many of these lesions are found in the deep fascia. The name fasciitis for this condition is very apt, inasmuch as the only anatomic structure involved in every case is the fascia. Furthermore, this lesion is now considered to be not a neoplasm, but rather an exuberant or inflammatory lesion.

The disturbing aspects of this lesion are as follows:

1. The rapid growth of the lesion in some cases.
2. The lack of encapsulation or circumscription of the lesion when excised by the surgeon.
3. The sometimes alarming histological appearance.

CLINICAL FINDINGS

The clinical history often is as follows. The patient or some member of the family notices the appearance of a lump or nodule, and shows it to a doctor. The duration of the nodule in most cases has been very brief, usually a matter of weeks, although in some cases growth of the lesion has been slow. An outstanding feature of some cases is the rapid growth; the size of the nodule has been known to double itself in a few days. Subcutaneous lesions are not attached to the skin, but are usually more or less movable under the skin.

Most of the lesions, when first noticed by the patient, have been less than 2 cm. in greatest diameter, although a few have been as large as 5 cm. in diameter. In some instances, the patients have complained of pain in the region of the nodule, but most of the cases have not been attended with either pain or tenderness.

Nodular fasciitis has been found in both males and females, both whites and Negroes, and in all age groups from the first few weeks of life to the 8th decade. Most cases, however, have occurred in people between the ages of 30 and 60.

The greatest number of these lesions have occurred on the upper extremity, more often on the forearm, wrist and hand, and less often above the elbow. A large number of lesions have occurred on the trunk. Occasional lesions have occurred in other parts of the body.

The usual sequence of events is that a surgeon proceeds to excise the nodule, and from that

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moment suspicion enters the surgeon's mind, because these lesions are not encapsulated, but often have finger-like projections into the surrounding tissue, and even appear to infiltrate the surrounding fat and muscle.

In most cases, the patient has presented a single lesion. However, there have been a few patients with more than one lesion. One case of great interest was reported by Hutter et al.[4] This patient had eight to ten nodules over his body that appeared simultaneously; one lesion in the scapular region was biopsied and found to be benign fasciitis. During a 4-year period of follow-up, most of the other lesions had disappeared. Another patient reported by the same authors had known residual fasciitis after the initial partial excision. The remaining tissue in the nodule disappeared in two or three months, without further treatment, and he remained free of the disease for at least 7 years of follow-up.

PATHOLOGIC FINDINGS

Not only does the appearance of nodular fasciitis create alarm in the mind of the surgeon but the histological appearance is often so malignant that pathologists have made a diagnosis of sarcoma. The following are the chief histological features of these lesions. (Fig. I).

1. Exuberant proliferation of spindle cells (fibroblasts).
2. An infiltrative manner of growth, without encapsulation.
3. Varying cellularity, from one microscopic field to another, in a given lesion.
4. The presence of many capillaries.

There is a tendency for the lesions to invade surrounding tissue, which is usually fat, and foam cells have been seen, features which sometimes suggest the diagnosis of liposarcoma. Another feature is an infiltrate of lymphocytes and other mononuclear cells, including mast cells. Still another feature is the presence of multinucleated giant cells in about one-half of the cases. Mitotic figures can usually be seen and are sometimes present in great numbers, which may erroneously lead to a diagnosis of sarcoma. However, the mitotic figures in this lesion are not atypical, and it has been pointed out that the presence of these mitotic figures is simply an expression of rapid growth.

Cellular pleomorphism is not marked, and the cells closely resemble the fibroblasts of young granulation tissue, having large, pale, vesicular nuclei.

TREATMENT

The initial procedure in most cases is excision biopsy, which is certainly adequate treatment. If the initial procedure is a partial, incisional biopsy, and the diagnosis is made with certainty, it appears that still no further therapy is indicated, as the lesions are entirely benign, and may even regress spontaneously.

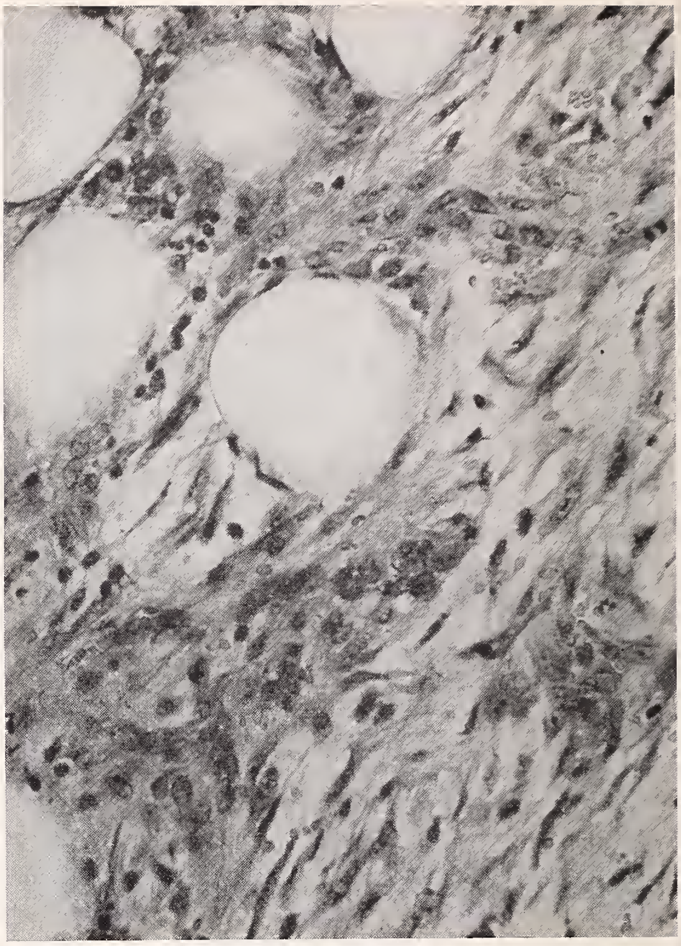

FIGURE I.

Nodular Fasciitis. Histologic section showing infiltrative growth (note penetration among fat cells, upper left), proliferating immature fibroblasts, and sprinkling of lymphocytes. H & E, x 160.

Some of the patients referred to in the literature have had unnecessary therapy as follows. Some had wider re-excision of the area where the lesions had previously been excised. Several patients have had post-excisional radiation therapy. One woman had a simple mastectomy, another a radical mastectomy, each presumably for a diagnosis of sarcoma of the breast. In at least two instances, referred to in the recent literature, amputation of the upper extremity was recommended to two men but was refused by each, with no untoward results.

Juvenile Melanoma

It has long been known that it is rare for a malignant melanoma to metastasize and kill before the age of puberty. However, it has also been known that lesions that histologically resemble the very grave malignant melanoma of adults are not at all rare in children.

It has been difficult in the past for pathologists to reconcile these well-known facts with the custom of making a diagnosis of malignancy solely on the basis of the histology of a lesion. Pathologists who were aware of the rarity of death from melanoma in childhood were faced with two alternatives when confronted with a lesion from a child that fulfilled their ordinary criteria for malignant melanoma:

1. Never to make a diagnosis of malignant melanoma in a child.
2. To make the diagnosis, but to append a comment to the effect that the prognosis was excellent in children.

In 1948 Spitz[5] greatly clarified the problem when she published a review of a series of lesions in children that had been called melanomas. She found, as expected, that most of the cases followed a benign course. She also found and described certain histological differences between these lesions and the ordinary malignant melanomas of adults. She applied the term "juvenile melanoma" to the melanoma-like lesions in children, and, while pointing out certain subtle distinguishing histological characteristics, concluded that they were in most respects histologically similar to the adult type of malignant melanoma.

It has subsequently become clear that the nonlethal juvenile melanoma of Spitz is distinct from the true malignant melanoma, and can be distinguished from it in most cases by histological criteria alone.[6] However, there are still a certain number of cases in which the diagnosis cannot be made with certainty on the basis of microscopic appearance.

True malignant melanomas do occur, though rarely, in children, and follow the expected lethal course. They resemble the ordinary adult melanoma, and can almost always be distinguished histologically from the benign juvenile melanomas.

Since Spitz's original histological description of juvenile melanoma, it has become apparent that identical lesions are found now and then in adults. And it has been found that juvenile melanoma is entirely benign in adults as well as in children. It is in adults that recognition of the lesion is so important. Clinicians and pathologists must be aware of the occurrence of juvenile melanoma in adults and must be cognizant of its clinical and histological characteristics to avoid damning with lethal diagnoses patients with innocent lesions. In children the problem is also important, but here the age of the patients will usually warn the physician not to be too hasty to accept a malignant diagnosis. In adults the problem is not always an easy one; the juvenile melanoma does closely resemble the true malignant melanoma, and in some instances the distinction cannot be made with assurance.

Because of the unduly threatening sound of the term "juvenile melanoma", some pathologists[7] have discontinued its use, and have suggested as substitutes the terms "spindle cell nevus" and "epithelioid cell nevus."

CLINICAL FINDINGS

The clinical features of juvenile melanoma, although by no means diagnostic, will occasionally suggest the diagnosis and will frequently be of help to the pathologist. Juvenile melanomas occur most commonly in prepubertal children, occasionally in young adults, and rarely in older adults. They may occur anywhere on the skin surface, most usually on the face or lower extremities. They do not occur on mucous membranes. They are always elevated, usually have a smooth surface, but may be verrucous. The degree of pigmentation is variable, but most of them are very lightly pigmented and characteristically have a pink to red color. Only occasionally do they ulcerate. Duration of the lesion is of no help in making a diagnosis; the lesion may have been present since birth or may have developed within a few weeks.

PATHOLOGIC FINDINGS

Histologically, juvenile melanomas have the general architectural features of compound nevi, combined with cytological features that suggest malignancy. Nests of nevus cells are found in the dermis and at the dermal-epidermal junction, as in ordinary nevi, but the cells themselves are quite striking in appearance. (Fig II). They tend to be larger than ordinary nevus cells, with large, vesicular nuclei and abundant eosinophilic cytoplasm. They are usually polygonal, resembling squamous cells, but may be elongated and spindle shaped, taking on the appearance of large muscle fibers. The nuclei, as well as the cells, are quite variable in size, but do not have the true pleomorphism of frankly malignant tumors. Mitotic figures may be present in variable numbers, but are never abundant. The most useful diagnostic feature is the presence of giant cells. These have single or multiple nuclei and are quite different from any cell found in malignant melanoma. Unfortunately, they are not always present.

Unlike the cells of the true malignant melanoma, which tend to occur in vast amorphous sheets, the cells of the juvenile melanoma are arranged in discrete nests, separated by connective tissue. When nests of spindle shaped cells are found near the surface, the cells are characteristically oriented perpendicular to the epidermis, appearing to "stream down" from the basal layer.

Another typical feature of the juvenile melanoma is the presence of marked acanthosis, approaching pseudoepitheliomatous hyperplasia. Strands of epidermal cells extend deep into the dermis, where

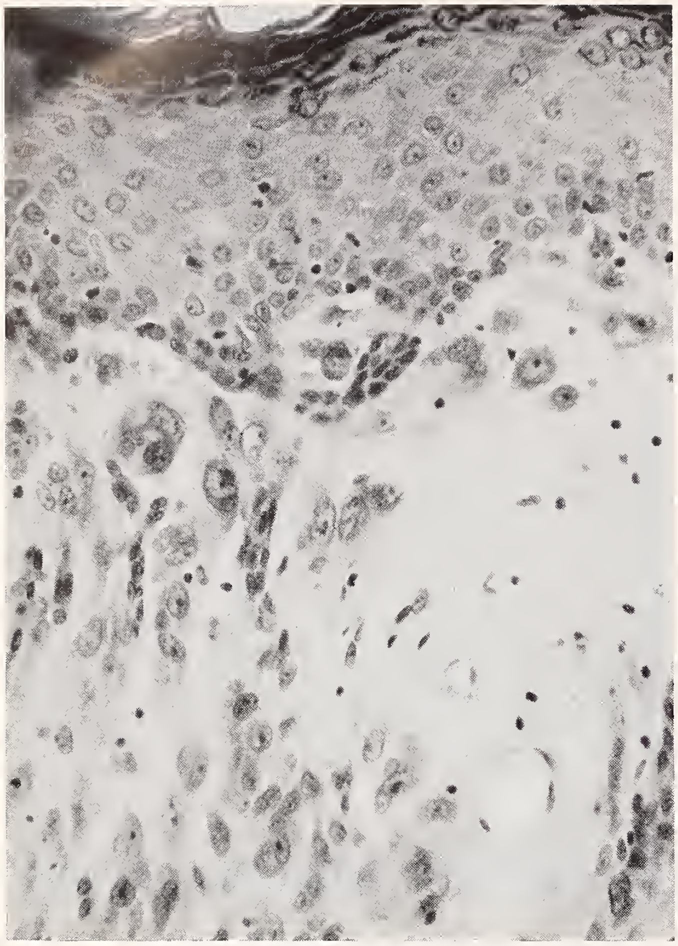

Figure II

Juvenile Melanoma. Histologic section showing large, rather atypical nevus cells in upper dermis. Several multinucleated giant cells are present just below the epidermis, and dilated capillaries are conspicuous. H & E, x 160.

they may be difficult to distinguish from the nevus cells. The connective tissue stroma of the juvenile melanoma often shows marked telangiectasia and edema in the superficial portions. A moderate mononuclear infiltrate is often found at the base of the lesion. Melanin pigment tends to be scanty or absent.

On the basis of these histologic features the great majority of juvenile melanomas can be distinguished from malignant melanomas, even when the patient is an adult.

TREATMENT

Simple local excision is adequate, and in most cases has been performed by the time diagnosis is established. If the initial procedure is only partial biopsy, the lesion should be excised in toto, which can almost always be carried out easily, without mutilation.

Keratoacanthoma

Keratoacanthoma is the most commonly used name for a rapidly growing benign skin tumor which clinically and histologically closely resembles squamous cell carcinoma.

The tumor was probably first described by Jonathan Hutchinson[8] in 1890 under the name crateriform ulcer, which he believed to be an acute epithelial cancer. He noted that the lesion grew quickly, making as much progress in weeks as a basal cell carcinoma did in years. The mass grew quickly into a firm red tumor in which the central portion broke down, leaving a crater. No regional lymphadenopathy was present and cure was obtained with local excision of the tumor in his cases.

In 1930 Dupont[9] reported a simliar lesion which he called "kyste sebacé végétant", and in 1936 MacCormac and Scarff[10] described ten cases of a solitary firm tumor which they had observed over a ten year period. The lesions developed rapidly and reached maximum size in four to six weeks. They occurred on the skin of the central face in older patients of both sexes. The authors gave the tumor the name "molluscum sebaceum" and they destroyed the lesions with radium, excision or electrodesiccation combined with dry ice refrigeration. Subsequently another name, keratoacanthoma, has been used for this tumor.

In 1950, Rook and Whimster,[11] and also Musso and Gordon,[12] found that this tumor regressed spontaneously. Beare[13] observed seventy-six examples of keratoacanthoma in a thirty-eight month period, suggesting a rather high incidence of the lesion. During this same period eight times as many basal cell carcinomas and twice as many squamous cell carcinomas were seen in his Dermatological Department at the Royal Victoria Hospital, Belfast.

CLINICAL FINDINGS

The fully formed lesion usually reaches a maximum diameter of 1 to 1.5 cm. It is a firm, hemispheric, skin colored, umbilicated nodule raised above the surface of the skin and has a central crater filled with keratin. (Fig III). The central

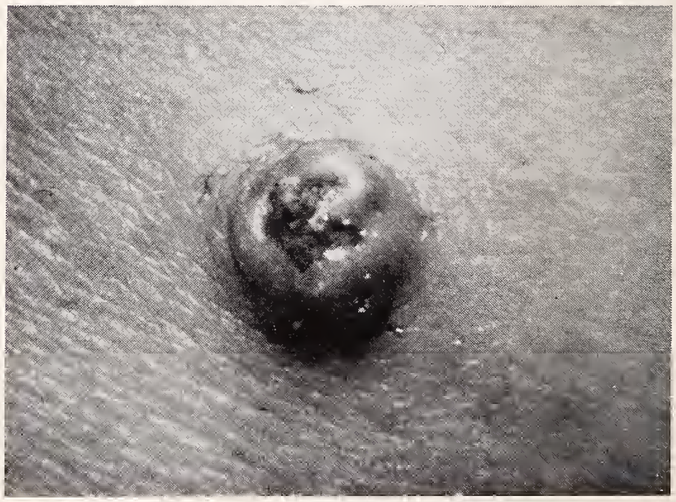

Figure III

Keratoacanthoma. Clinical photograph showing dome-like shape of lesion and central, keratin-filled crater.

face is the most common location although the lesion may appear elsewhere. Maximum growth is achieved in four to twelve weeks. Keratoacanthoma regresses spontaneously, beginning soon after maximum size has been attained. Involution is complete within four to six months, leaving a puckered scar. The great importance of this tumor lies in the ease with which it may be confused with squamous cell carcinoma both clinically and histologically. The following clinical characteristics serve to distinguish the two lesions:

1. Growth:
   The growth of keratoacanthoma is far faster than that of squamous cell carcinoma.
2. Clinical Appearance:
   Keratoacanthoma has a characteristic appearance, consisting of a hemispheric nodule with a central keratin-filled crater without the bleeding and ulceration often seen in squamous cell carcinoma. There is also an absence of underlying induration in keratoacanthoma and the regional lymph nodes are not enlarged.
3. Regression:
   Keratoacanthoma usually reaches its maximum size within eight weeks and subsequently regresses. Squamous cell carcinoma grows far more slowly and does not display any tendency toward regression but rather continues to enlarge in size.

PATHOLOGIC FINDINGS

Microscopically, the characteristic features of keratoacanthoma can best be evaluated in a section through a major portion of the lesion. Attempting to make a diagnosis on the basis of a small biopsy is hazardous, and may be difficult on occasion even when the entire lesion is available for study.

On section, the lesion consists chiefly of a massive local hyperplasia of the squamous epithelium, with a central crater filled with keratin. The adjacent epidermis is elevated to form a lip surrounding the mass of keratin. At the base and sides of the crater is found the greatly hyperplastic epidermis, which extends into the dermis in large, club-like strands. (Fig. IV). A mononuclear infiltrate regularly surrounds the lesion.

The proliferating squamous cells are invariably well differentiated; they mature rapidly as soon as they rise above the basal layer. They are large, with abundant pale cytoplasm and relatively small nuclei. Indeed, they give the impression that they are maturing more rapidly and more completely than the squamous cells of normal epidermis. Frequently they progress to keratinization within the downward proliferating masses, forming large pearls. The cytological characteristics that are ordinarily associated with cancer are generally not seen.

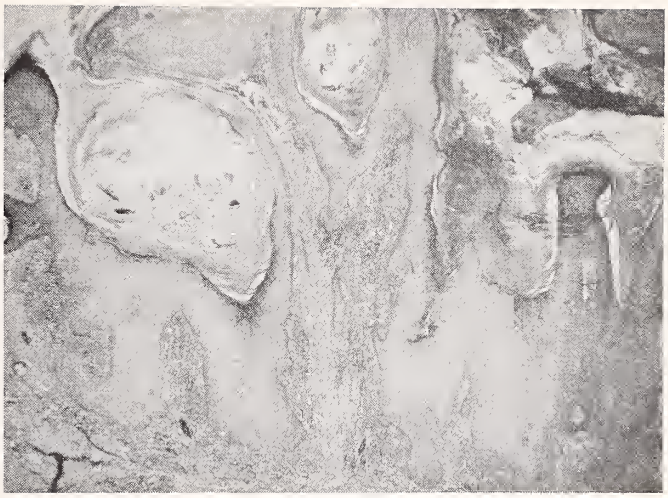

Figure IV

Keratoacanthoma. Low power view showing edge of keratin-filled crater at upper right and deep penetration of epidermal pegs into dermis. Maturation of epidermal cells is perfectly orderly. H & E, x 32.

Unlike the invading epithelial strands of many epidermoid carcinomas, which are frequently narrow, irregular in outline, and poorly delineated, those of keratoacanthoma are thick, rounded, and well circumscribed. The depth of penetration of these club-like epidermal proliferations is fairly uniform throughout the lesion; a line drawn through their deepest points would form a smooth curve outlining the lesion, like an imaginary barrier preventing further invasion.

Despite the differences noted above, the histologic features of the keratoacanthoma closely resemble those of a well-differentiated epidermoid carcinoma. There will be cases where the diagnosis cannot be made on histologic grounds alone. In such instances, a history that reveals the lesion to be of less than eight weeks duration is powerful evidence in favor of a diagnosis of keratoacanthoma. Carcinomas so well-differentiated as to cause confusion are of much longer duration.

TREATMENT

Keratoacanthoma can be cut flush with the surface of the skin, thus providing a specimen for histologic confirmation of the clinical diagnosis. Such treatment usually assures a better final cosmetic result than allowing spontaneous disappearance to occur. Complete excision is an alternate therapy recommended by many.

Summary

Three lesions of the skin and subcutaneous tissue which have often in the past been regarded by clinicians and pathologists as malignant have recently been recognized as benign, and criteria for identifying them have been described. The lesions are nodular fasciitis, juvenile melanoma, and keratoacanthoma, which may easily be confused with sarcomas, malignant melanomas, and epidermoid carcinomas, respectively. If the clinician and the pathologist are aware of the characteristics of these lesions, and if biopsy is performed, diagnosis can in most instances be made with assurance. It is hoped that increased awareness among physicians of these lesions will prevent unnecessary mutilating surgery and unjustified fear of recurrence.

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Word-watching—A sentence should have no unnecessary words. If you will read your early drafts with an eye to pruning away the deadwood, you will find a number of words that never would be missed. You will also find compound prepositions and conjunctions that can be replaced by single words:

at the present time	now	notwithstanding the fact that	although
in view of the fact that	because	take into consideration	consider
comes into conflict	conflicts	the manner in which	how
in order to	to	one and the same	the same
in the course of	during	one of the reasons	one reason
in the nature of	like	until such time as	until . . .

"At this time" or "at the present time" is at best a wordy way to say "now." "There is," "there are," "it is," are word-wasting, and weak ways to begin a sentence. Start with your subject:

It is apparent that there is a conflict of opinions.	Opinions differ.

"Cut out unnecessary words" is advice not easy to take. Although we may not fancy ourselves great writers, once we have put something on paper we find it hard to cut. To do so while still glowing with the pride of authorship is probably too hard. But if we will put it aside for a day and then read it, not lovingly as our own, but dispassionately and even critically, pretending we are the person for whose eyes it is intended, appreciable improvements usually suggest themselves—Weihofen, H.: Word-Watching for Lawyers, *Amer. Bar Assoc. J.* 50:663-666 (July) 1964.

Chromosomal Anomalies And Ocular Defects

A Resume — Part I

Henry L. Birge, M.D.

Introduction

Human life began thousands of years ago from a single fertilized cell. The multiplication, specialization, mature functioning and the creation of new life is controlled more accurately than by an "IBM" machine through the nucleii of the protein molecules; DNA, deoxyribonucleic acids or chromosomes.[1]

DNA presumably synthesizes RNA, an intermediate set of molecules of ribonucleic acid in the cytoplasm where RNA produces particular enzymes which regulate various cell functions.

Genes are considered to be molecules of DNA, and when absent or damaged by mutagenic agents such as irradiation or chemicals, or inheritance, a wide variety of morphological, physiological, biochemical and metabolic abnormalities occur.

The mutation of a gene may have an effect of minor import or become lethal. Lethal genes[2] have been estimated in normal heterozygous persons to be carried in the recessive state, as often as 8 to the person: (12 out of 2 billion others).[14]

Lethal genes offer one tool for the identification of the casualty, and thus the tracking down of the abnormal cell differentiation.

Among the many lethal genes already known is one which results in phocomyelia,[2] cleft palate and shortening of the extremities, as after thalidomide. Thalidomide babies have been shown to have 30 per cent visual defects.[3]

Ocular defects offer another tool for the study of gene mutations, and the breadth and depth of hereditary chorio-retinal degenerations has recently been reported in a two-volume treatise by Franceschetti, Francois and others.[4]

Mutations occur at varying rates in various organs, and aging[15] appears to be the result of a lack, or rarity of cellular division. The cells in the body which are constantly dividing, as in the bone-marrow, the intestinal mucosa, and the testicle are the longest lived, and exhibit the fewest mutations.[1]

The muscle cells which do not replicate, show aging or weakness among the first of the systems to be affected. The brain, although estimated to lose without replacement, 10,000 cells a day shows decreased ability only with advancing years.[1] If a cell divides, the chromosomal aberations are cast off by repeated divisions. In the older females, the oocytes, which divide very slowly, if fertilized, give rise to more defects and a shorter life span in the offspring than children of younger mothers.

Radiation[5] increases the onset of senescence, or of mutations. But radiation has many other characteristics, 12 of which range from small to large at an infinite series of points.

Reports of subsequent fertility of survivors of radiation accidents are few, but it has been shown[6] that all reported males were sterile 4 months after exposure to 236-376 rads, and recovered good spermatic morphology and quality after 41 months. Genetic effects following recovery have not been reported, although germinal epithelium appeared normal.

The new science of the study of chromosomes has already offered explanation of several ocular abnormalities. A chart of the 46 chromosomes of a single cell, as determined by cytogenic examination, is termed a karyotype. The karyotype demonstrates either morphological or numerical changes in the chromosomes.

Observations of anomalous numbers of chromosomes, in syndromes of living congenital anomalies have been limited to only a few types;[7] others are apparently lethal.

An extra chromosome, or trisomy, may occur in any of the 23 chromosomes. In mongolism it is in number 21.

The abnormalities seen in numbers 17 and 18 are ocular defects such as ptosis, inner epicanthal folds, and abnormal orbital ridges.

In chromosomes 13—15 the abnormalities are cleft palate, congenital malformation of the heart, ears, fingers, brain and mental retardation.

The cause of autosomal trisomy is not yet known, but the abnormality occurs during meiosis. Nondisjunction leads to a germ cell with an extra chromosome, and when this unites with a normal germ cell, one of the chromosomes exists in triplicate.

A case of severe microphthalmia with coloboma of the iris, cataracts, and retinal dysplasia, in which the karyotype showed 47 chromosomes, with trisomy

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for 1 of the 13–15 group was reported by Miller,[7] et al.

Familial diseases frequently described in the literature often resemble these cases in which trisomy was found in chromosomes 13–15. Victor[8] et al reported 3 cases of Oculo-pharyngeal Muscular Dystrophy of late life. One patient showed a sporadic form, and 2 were members of a large family in which 3 generations had an identical clinical disorder.

It is logical to expect the genes to be abnormal in these cases with late-in-life abnormalities. No reports of karyotypes demonstrating abnormalities of the *genes* are as yet available.

"Ocular changes and Allied Investigations in Myotonic Dystrophy[9] described 15 patents exhibiting a heredo-familial degenerative disease of the voluntary muscular system, with inferior mentality. These cases showed 5 ocular changes: ptosis, sluggish pupillary reflexes, corneal pathology, lens change, and fundus pathology.

Myasthenia gravis is different from myopathy or dystrophy, but we have not as yet proven either of them related to defective genes or chromosomes.

The genetic relationship between Leber's disease and aneurysmal retinitis is recorded in 5 cases by Maggi.[10] He furthermore relates Coats' Disease and Eales' Disease, especially in their early forms, to the same unknown (and possibly genetic) pathogenesis. The emphasis by Maggi,[10] adding to the general American opinion of Leber's Disease, upon these vascular changes lends support to the genetic theory that many hormonal dysfunctions (Diabetes and Diabetic Retinitis) are based upon either gene or chromosomal variants. Reese[11] put forward the idea of angioma retinae, and angiomatosis and retinal telangiectases being related to Leber's Disease in 1956.

Nor can we omit from consideration the vascular sclerotic changes in the choroid, as depicted by Franceschetti et al,[4] as unrelated to inheritance—or in some cases to mutagenic substances.

Arteriosclerosis in its many forms—and this may well include Temporal Arteritis,[12] with its destructive changes in the retina and optic nerve—has long been suspected of being an inherited condition.

Hereditary Degenerations Of The Choroid And Retina, Together With Associated Mental Deficiency And Other Systemic Diseases

(Abstracted and Translated from the original) [4]

Several life-times of ophthalmic opinion, and a total review of the literature[13] by Franceschetti of Geneva, Francois of Ghent, and Babel of Geneva, three outstanding professors of Ophthalmology in small European universities, and their collaborators, has been printed by the French Ophthalmological Society, and the Library of the French Academy of Medicine.

Not only ophthalmologists, but those newly interested in mental retardation, associated as it often is with inheritance, will perhaps find this information opens new avenues of consideration. If, as has been said, the eye is the mirror of the soul, perchance a review of the visible degenerations in the living eye may benefit humanity, in spite of the absence of color photographs, in this review.

A scienific review must, of course, cover all the recent new techniques of examination, such as electroretinograms, electro-encephalology, physiology and biochemistry of the subject, and many other aspects. In this review those methods of study will be discussed towards the end of the article.

Hereditary Chorio-Retinal Degenerations; Autosomal, Predominantly Tapeto-retinal

Leber (1916) used the term tapeto-retinal degenerations, otherwise known as abiotrophy of the retina, when he grouped together for study all the hereditary degenerations of the retina.

In one group are to be seen those retinal lesions without neurologic complications, and in another, the cerebro-retinal degenerations.

The close relationship between the degenerations of the retina and the cerebro-spinal degenerations, make terms of description equally applicable.

Genetic Comments: European

Both in neurology and ophthalmology the idea that well defined types of familial degeneration occur, has been given up. It has been thought more reasonable to accept the different combinations of degenerative processes, note the transitional forms, which lead to new clinical pictures, some abortive and some more extensive.

Franceschetti (1930) and Francois (1948-58) now agree that the same genetic constitution and the same degenerative process can give rise to varied phenomena, in the retina, and elsewhere.

Similar agreement between Behr (1920) and Sorsby (1940) in studies of macular degeneration is noted. Congenital, juvenile, adult or senile macular hereditary degeneration may be the expression of the same abiotrophic process.

In neuro-ophthalmology it is apparent that instead of well defined types of degeneration, there are merely certain biotypes, having a constancy in certain families.

More and more it is noted that certain neuro-retinal degenerations are ascociated with hereditary metabolic difficulties. It is more than possible that enzymatic abnormalities may be at the root of some of the obscure neuro-retinal degenerations.

The tapeto-retinal degenerations, as well as the neurologic familial degenerations, usually show 3 outstanding characteristics:

1. In different members of the same family the affection is noted at the same age. (perhaps at birth).
2. Different members of the same family show the same clinical symptoms and style.
3. The affection has a tendency toward progressive evolution.

In order to understand the great variability of symptoms and findings between families, and in the same family, it is important to consider:

a. Specificity of the gene
b. Penetrance of the gene
c. Expressivity of the gene

Historical Background

Much has been written upon progressive tapeto-retinal degeneration. All the known geneological trees (366) were assembled by Bell in a monumental book in 1922. ("The Treasury of Human Inheritance"), by K. Pearson. Much has been written since then.

Tapeto-retinal degeneration has been classified by Leber (1916) and Franceschetti (1930) as:

1. peripheral type
2. macular type
3. diffuse or mixed type

and this is born out by the results of the modern ERG (electro-retinogram).

The opinion that a certain case is not hereditary because no other cases are to be found in a family is erroneous, because there could be recessive transmission, even without recent consanguinity; or in another way as an irregular dominance, which is to say an incomplete penetrance; or still another way—through mutation. Mutations occur from 0.1 to 1.0 per 100,000 per generation.

Pigmentary retinopathies are most judiciously classified from a purely genetic point of view, into the

a. recessive form (classical) 37 per cent
b. dominant form 19.5 per cent
c. sex-linked recessive 4.5 per cent (Francois)
d. sporadic — 30 per cent

In the recessive form the taint depends upon two injured genes, while in the dominant form, one pathologic gene is more or less compensated by a normal gene.

Typical Pigmentary Retinopathy: Recessive (37 Per Cent)

When seen with the ophthalmoscope, 3 factors are notable; the pigment in the retina, resembling "chicken-tracks" or osteoblasts; the attenuation or narrowing of the arteries; and the yellowish pallor of the optic nerve.

Variations in pigmentation are legion, from heavy to light and even absent. When very little or no pigmentation is seen, the possibility of confusion of the disease with optic atrophy is likely unless an ERG is obtained. Macular or peri-macular pigmentation is discussed under later headings.

Atrophy and sclerosis of the choroid is observed in 85 per cent of cases.

Macular degeneration is common, and often best seen with red-free-light.

Visual field defects are typically the annular scotoma, 90 per cent, and often progress so that residual vision is limited to a central 5-10° tube-like field, with occasionally some far-out peripheral vision left.

Central vision may persist for years, in mild cases of tapeto-retinal degeneration.

Sector field of defects occur, and may cause difficulty in diagnosis, when neurologic changes also exist.

Diminishing the light under which the visual field is tested enlarges the defects and scotomas.

Night blindness is often one of the first symptoms in pigmentary retinopathy.

Color sense in pigmentary retinopathy may be normal, or, as frequently occurs, defective in varying degrees. The most frequent dyschromatopsia occurs in the blue-yellow axis. Those in red-green are rare, except in atypical retinopathies, and possibly in connection with congenital color blindness. Occasional cases of complete or total achromatopsia have long been reported.

Electro retinography has been extensively used to study this particular syndrome, especially in Europe. At least 8 typical responses are described, in keeping with the field and fundus changes. Electro-oculography is also described (Francois).

Electro-encephalography in cases of tapeto-retinal degeneration has shown minor and subnormal changes in 88 per cent of the tapeto-retinal degenerations which were seen to occur before the age of 26 years. Major alterations in the E.E.G. were shown in 45 per cent of these early cases. When the condition arises at age 43 or later there are somewhat fewer EEG abnormalities, 74 per cent subnormal, and 35 per cent with major alterations.

Heredity

Pigmentary retinopathy is hereditary, and may be transmitted in three ways: 37 per cent recessive autosomal; 19.5 per cent by dominance; and the exceptional sex-linked recessive form, 4.5 per cent. The sporadic forms are seen in 39 per cent.

In the recessive form, the taint of several members of a family, born of apparently healthy parents, is the outstanding fact. Pseudo-dominance must be mentioned, when one of the parents carries the taint. Consanguinity of parents is found in only 20-30 per cent of these cases.

Bell reported only 27.2 per cent related to consanguinity; when deafness was associated with pigmentary retinitidies, the figure rose to 40.2 per cent.

Similar figures come to light in cases associated with neurological taints:—37.7 per cent. Consanguinity makes the condition considerably more grave. It may be supposed that each parent supplies a related gene, and even though these genes are quantitavely slightly different, their presence increases the chance of mutations, and their combined effect increases the likelihood of more serious manifestations.

Theoretically, a recessive inheritance may manifest itself in 25 per cent of the children, even though the parents are heterozygotes. These figures are born out by the work of Scheurlen (1935) in 56 brotherhoods of 309 cousins, and of Ammann (1961) who reported 98 cases of pigmentary degeneration.

Sex-ratio: while several large series found a few more males affected than females, the difference was not considered significant in 3 of the series, but in one, was significant. It is therefore allowed that there may be some sex-linked factor in pigmentary retinopathies.

The literature reports only six pairs of twins with the condition, probably all monozygotes. In 2 others there was discordance.

Pigmentary Retinopathy: Dominant (19.5 Per Cent)

The frequency of 19.5 per cent is obtained by Francois by counting the affected persons while much lower figures have been reported by many other authors (2-4 per cent) who counted only the sources of origin. A genetic tree of 6 generations, 57 involved persons, in 118 members of the family,—(Beckerhaus 1925) has been reported.

Some important comments on the transmission of Hereditary Retinitis Pigmentosa, which have not been widely understood in this country are given by the authors.

1. Transmission across two consecutive generations is not absolute proof of dominance. For instance, it has been reported after a marriage between a homozygote (carrying the recessive form) and a heterozygote. In Switzerland the occurrence of the gene responsible for recessive pigmentary retinopathy has been calculated to be 1:84, and in consequence of that the heterozygote carries 1:42 chances. Therefore, one tainted with the recessive form has one chance in 42 of marrying a conductor, even without inter-marriage, and of having therefore, 50 per cent of his children show the malady. (pseudo-dominance)
2. Autosomal dominant heredity is not proven certainly unless there is seen 3 generations consecutively affected, together with transmission from father to son. If this last does not occur, it could be a sex-linked dominant heredity.

The sex-linked dominance shows, from the affected mother, 50 per cent of the sons and daughters afflicted, while from the affected father only the daughters show the taint, because the X chromosome of the male only passes to the daughters.

An analysis of all the geneological trees in the literature was made, and showed, when at least 3 generations were considered, both regular and irregular dominant transmission. Changes in dominance occurred and the postulation was made that a recessive gene carrying retinopathy could become dominant when another factor, such as the gene of otosclerosis, brought to bear in the family a complimentary factor.

Consanguinous marriage caused the gene of retinopathy to appear as a pseudo-dominant in 2 consecutive generations, and in another family, simulated irregular dominance.

The ERG is abolished in 80 per cent of the dominant cases of pigmentary retinitis. Many variations have been reported. One by Ruedemann showed slow diminution (scotopic) of the ERG in other members of the family of one tainted with the retinopathy, as the generations proceeded, even without changes in the appearance of the retina.

It is of interest that neurologic complications are much less common in the dominant forms than in the recessive forms. However, many inter and intra-family variations have been described in the dominant form. Besides retinitis punctata albescens, and forms without pigment, and total blindness, there are equivalents: — Deafness, otosclerosis, hemeralopia, corneal degenerations, and Niemann-Pick's disease. The interpretation of some of these variants, *without* a careful study of the geneologic tree is not prudent.

Atypical Retinopathies From The Point Of View Of Pigmentation

A. RETINITIS PIGMENTOSA WITHOUT PIGMENT

Progressive Form

This type of retinopathy is not rare, and has been reported since 1871 (Leber). The pigment often remains absent until 30 or more years of age. This form of degeneration is genetically identical to the pigmentary types, both are seen in the same family. It can be either recessive or dominant. The diagnosis may be difficult. The ERG is practically always abolished, as in the classical degeneration.

Young individuals usually have little or no pigment, but in time the pigmentation may become typical, although not infrequently total absence of pigment is seen.

B. RETINOPATHY MULTI-PIGMENTOSA

There are, in opposition to the above cases, those in which there is pronounced and dense pigmentation. It is to be kept in mind that the pseudo-retinopathies of infectious origin are often heavily pigmented.

At times a mosaic appearance may be noted, when white spots alternate with heavily pigmented areas.

C. RETINITIS PUNCTATA ALBESCENS

Since 1882 when Mooren described the condition, little has been added to the characteristics of the syndrome. It is composed of:

1. Retinal degeneration in the form of a number of white spots.
2. Appearance in youth, and often in several members of the same family.
3. Consanguinity frequent.
4. Concentric contraction of the visual field.
5. Diminution of central vision.
6. Congenital night blindness.

This definition confirms the close relationship of albescens with pigmentary retinopathy in its mixed forms, which present both white spots and areas of more or less typical pigmentation.

While Nettleship (1908) reserved the term albescens for the rare cases in which all the fundus was covered with white spots, common usage has come to make the term applicable each time the white spots are seen.

The white spots are usually round, and the size of the diameter of the 2nd branch of a retinal artery. They usually begin about the posterior pole, and spread toward the periphery. Poetic descriptions have compared them to the stars in a November sky.

Many areas in the retina have been described as the areas where the white spots are located, but no pathological specimens have been found to prove exact location. Often there is severe sclerosis of the choroid of the posterior pole. Hemeralopia is usually severe. The visual field is contracted both to white and colored objects. The color sense does not show alterations with classical methods of testing (anomoloscope. Ishihara) but the Panel D-15 and the 100 Farnsworth reveal a dyschromatopsia of the yellow-blue axis. Central vision may be preserved, while the macular area remains uninvolved in the tapeto-retinal degeneration.

The ERG is almost always absent.

The two sexes are about equally involved in albescens, and consanguinity is often present (30 per cent Lauber). Recessive retinitis punctata albescens has been confirmed in the study of genealogical trees. It has been in co-existence in the same families with other cases of pigmentary retinopathy. Some rare family trees suggest a dominant transmission.

The Stationary Form Fundus Albipunctatus

A few cases have been described in which the degeneration appeared less severe and stationary. These show no abnormal retinal pigmentation, normal vessels, and have a more or less normal ERG.

They usually begin in infancy and do not have macular involvement and thus preserve good vision. They always show hemeralopia. Whether they are true tapeto-retinal degenerations has not been decided.

Retinitis Punctata Albescens And Other Anomalies

Marginal dystrophy of the lens; Infantile acidosis of tubular origin, the syndrome of Bardet-Biedl, (syndactyly) Friedreich's ataxia and mongolism have all been reported in conjunction with albescens or albipunctatus.

(end of Part I)

(*This is the first of two articles*).

Footnote

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Common Denominators In Chronic Illness Care

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And Health Of The Aging Activities**

■ Twenty or more common denominators and mutual interests press for attention while appraising Connecticut's resources and priority unmet needs as related to the care and prevention of chronic illness and incapacity. That our interests and resources compare favorably with other states is insufficient if we know far better than we do; and if we are far from a goal to insure the provision of optimum resources in terms of personnel and facilities and their maximum effective use for the benefit of the people of Connecticut, with emphasis on education and prevention, and the care and rehabilitation of patients both old and young. Furthermore, in the words of the Connecticut State Medical Society, during Community Health Week in October of 1964: "In health and illness, no one stands alone."

Mounting death rates and disability from cardiovascular diseases and various kinds of cancer, and extensive disability from neuromuscular and pulmonary diseases illustrate the problems which include such conditions as: accidents, arthritis, blindness and vision, cancer, dental defects, diabetes, heart diseases, hearing and speech, neurological diseases, and respiratory diseases including emphysema. The costs of chronic diseases, exclusive of mental disorders being studied by others, the long-stay in hospitals, and public assistance to needy, only partially reflect the situation. Few thousands escape the personal tragedies. Problems of "medicated survival" costs of goods and services, tragedies from quacks, individual and family anxieties, affect most people in one way or another. Are we using medical and public health practices in a manner to reduce the causes of chronic illness, as for example in syphilis, tuberculosis, air pollution, noise, and other conditions that plague us?

We know ways to prevent much long-term illness. Many disabling conditions may become rare, as are typhoid fever, puerperal fever (due to criminal negligence occasioned by carelessness in a hospital delivery room or maternity ward), and diphtheria. An indictment on local health services, their occurrence reflects inadequate standards of health practice, poor communication, and ineffective professional and public health education.

Keys

The physician is a key person in any community or family program relating to health, and this is especially true in the early discovery and care of chronic illness. No team approach is complete, however, unless the family, the priest, and the nurse, among numerous other professionally equipped people, depending upon the situation, are included. In Connecticut, we are fortunate that our economic status, our ratio of physicians, dentists, and nurses to population, our standards of medical and hospital practices and services, are relatively high, as are the still growing interests of the people who live and work here.

The following table gives basic information about total numbers of personnel for special purposes in Connecticut:

ANNUAL REGISTRATION OF PROFESSIONAL PERSONNEL
LICENSED IN CONNCTICUT

	1958-59		1963	
PROFESSION	REGISTERED	IN ACTIVE PRACTICE	REGISTERED	IN ACTIVE PRACTICE
Doctors of Med. & Surgery	6,373	3,992	7,504	4,132
Dentists	2,289	1,717	2,641	1,825
Registered Nurses	21,659	14,552	28,763	15,362
Licensed Prac. Nurses	3,120	2,518	4,674	2,796
Dental Hygienists	1,054	880	1,302	572
Physical Therapists	512	264	587	246
Optometrists	360	269	370	276
Chiropodists	257	202	261	193
Chiropractors*	174	126	141	112
Osteopathic physicians	106	65	88	49
Natureopaths*	70	43	51	32

* Not permitted to use or prescribe internal medication or perform surgery.

NOTE: According to the National Industrial Conference Board, the American family spent its "health dollar" in 1960 as follows: Hospitals—27.2 cens, Physicians—26.0 cents, Dentists—10.2 cents, Drugs—20.1 cents, Glasses & Appliances—6.2 cents, Nursing Home Care—1.4 cents, Health Insurance—4.3 cents, Other Professional Services—4.5 cents.

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Our basic state-wide community health structure, however, has serious gaps in the battle line against incapacity, because only about half of the population, living in 15 of the 169 local communities have modern health departments guided by full-time prepared medical health directors. Also, bearing in mind that 36 per cent of the state welfare expenditures are for medical and dental services, the need for clarification and revision of outdated legislation is illustrated by the over 100 different local practices or standards of public assistance in child welfare, according to the helpful report of the state commission on legislation.

Communication Channels

Barriers to effective communication are a great handicap. For example, besides considering specific diseases, and disabilities as those due to accidents, the time has come for those who plan ahead for Connecticut to determine also the levels of institutional and non-institutional care needed by the chronically ill, essentially cutting across the categorical disease areas. Such areas have significance for our purposes chiefly in terms of kind of care needed. With this in mind, it seems clear that an Information and Referral Service should be developed as one specific effort toward coordination of activities and to facilitate measures for early discovery and diagnosis, education (professional and public), and prevention, coupled with economy and efficiency of community programs. The referral and reporting procedures should, of course, be planned with the doctors.

The purpose of such a project, is to demonstrate how a broad service to the chronically ill (affecting all age groups) and aging can help them utilize community resources better. Meanwhile, anyone who calls for assistance with a related problem may receive service—information being acquired regarding gaps in community services. Such Information Service can become a generalized, state-wide community information and referral center. Local support can be obtained (as in Rhode Island, for example), from the State Department of Health, the State Tuberculosis and Health Association, the Commission on the Elderly, other state voluntary health and welfare agencies, church groups, and the State Welfare Department, among others.

The majority of inquiries for guides along the pathway would pertain to chronic illness and rehabilitation problems and possible resources for help. In addition to answering inquiries from individuals, Information Service could provide consultation to community agencies and professional people who seek help on referrals and for orientation to community resources. Formal consultation sessions, as an illustration, were initiated in a recent year in Rhode Island with district nursing, social service, housing, health, family and business relocation offices. Help is given in identifying community services available, understanding how such service may be useful, and finding the agency or agencies that can best provide for specific needs. "By telephoning the Information Service's advertised number, it is possible for anyone in Rhode Island to discuss his situation, receive accurate information on services and also receive personal assistance in reaching the appropriate one." The Service provides a link between community services and individuals with specific problems of their own or concern for others. Problems that cannot be handled by telephone are given direct attention in the office or by home or other field visits.

Continuing Education And Preparation

There is a frequently expressed unmet need for more training and better preparation of physicians, dentists, (including students and interns), nurses, social workers, teachers, specialized health educators and other health and related personnel, and clergy, including inter-disciplinary training. Furthermore, each of these groups, as part of the "prevention team," is in a strategic position to reach the people who would benefit by preventive services. Some good work is going on; but efforts are spotty and fragmented so that the surface of potentialities has hardly been scratched. Careful, imaginative, cooperative planning by people associated with the many educational, institutional and other professional groups could meet the situation with little additional financial outlay, provided students and others involved were motivated to accept the principles and practices of prevention, and the concept that helping people attain optimum health is a goal of practice in each of the professions. This may involve some new directions in medical education and in various professional schools, besides a widening of the practitioner's and the instructor's horizons.

Everybody needs information and education concerning chronic illness. Community leaders and the adult public are immediate targets. Especially among such groups as parents, young married couples, and industrial workers, a program is needed to motivate individuals so that they and their families will develop interests and favorable attitudes, and that the communities in which they live will have an understanding and desires sufficient to take steps proposed for the prevention of chronic disability. The school affords opportunities for the development of positive attitudes and constructive influences.

More people need to realize how much their physicians can do now to help prevent chronic disease. Physicians have too little chance to use their knowledge about prevention. The doctor is a friend who can advise his patients even on their nutritional requirements and the physiological and emotional changes that occur in different stages of life. A good community program can help the families. Familiarity with the working environments of his patients, furthermore, will alert the physician to the possible relationships between occupation and disease. A concerted effort by existing organizations for more joint planning and cooperative action for health education of the public, would strengthen our resources.

Health activities directed against chronic illness are scattered among a variety of public and private organizations and institutions. Many activities are limited to particular age groups, disease categories, economic and ethnic components of the population. An administrative goal of an all-out campaign is to find ways in which these various groups can work together toward the common objective of creating a healthier community. Perhaps there is a role for the Connecticut Health League (Council) with its membership of over 30 agencies, to perform an active part in facilitating joint study and concerted action.

Evaluation, Planning And Research

A study—now in progress—involves the status and needs of patients who have been discharged from the state chronic disease hospital service. Evaluation of these services should be expanded to new state services in order to insure that the state program is sound and that unmet needs are recognized and plans for care are patient centered and needed. The timetable is necessarily dependent upon adequate finances to permit additional personnel, equipment and facilities to be provided.

In behalf of patients of chronic illness and the so-called aging, furthermore, roles of various groups and their responsibilities are multiple. They include housing, nutrition, mental health activities, rehabilitation, medical care, nursing, and numerous other services. Individual evaluation, kindness, and teamwork of all concerned are essential. Evaluation is continuous, and must be on a longitudinal basis also. Patients go to acute hospitals, to rehabilitation centers, to nursing home or to private living; from rehabilitation center to hospital and back again; to nursing home and to hospital and back to private home, sometimes. Any plan has to be tailored to the individual and family needs, and must be flexible, many-phased and continuous or longitudinal, with efforts to strengthen the bridge between hospital and home.

Furthermore, a responsibility sometimes overlooked is that of inter and intra-agency coordination, including partnership between individuals concerned with the same problems, patients, and families. Too many of the existing resources for meeting needs are unknown and unused. Too much duplication of efforts exists, especially in so-called pilot and demonstration projects. Yet gaps, fringes and "alleys" are more serious than duplication and overlapping. A more conscious effort to use all available resources wisely can be encouraged. While citizen involvement is not unique in community organization, it requires special attention if desired programs are to be achieved through agency leadership.

Plans need to be comprehensive, geared to local, state and national developments, and embody a new and fresh look at the adequacy of coordination of efforts. Attention has to be given to the planning structure. This includes consideration of interorganizational planning, state and local. There is a question if the traditional health and welfare council is the only planning instrument which can function in a community or a state. Should planning and services be separated?

Research is another common factor that cuts across and permeates all categories! Increased research is a basis for progress and is pressing for attention in every phase of chronic illness and rehabilitation in order to expedite wise planning and cooperative action, by all concerned. In order to establish a firmer foundation for primary prevention, studies are needed in the natural sciences, in genetics, in nutrition, in occupational health, and in mental health, while expanding epidemiological and administrative research studies. More comprehensive and adequate statistical data would provide essential information and guidelines. Studies to improve planning and organization and the course of operation deserve early consideration. Those concerned with professional and public education are seeking to find ways to reduce the lag between the acquisition of knowledge and its use. Who needs to know what? How to teach? How to influence people and their attitudes under varying conditions? How to measure effectiveness of procedures and services? Among the common denominators are: Methods of Assessment, Public Health Nursing, Social Service, Hospitals and Nursing Homes, Rehabilitation, Occupational and Physical Therapy, Dental Care, Home Care, Laboratory, Statistical Services, Homemaker Services, Environmental Health and Safety, and Recreation.

Steps Forward

Dr. M. G. Candau, Director-General of the World Health Organization, has said that the presence of preventable disease and low health standards anywhere in the world represent a danger for all countries and an obstacle to world peace. Likewise, we know that Connecticut can set a practical example, as illustrated by its early and unique cancer register and by its Board Members Organization for public health nursing, to mention only two features of international interest. With concern for Regionalization and an active State Development Program, it is hoped that this newer activity may permeate more actively and fully the total program for advancement in public health and medical affairs.

Community Health Week, an educational plan of the Connecticut State Medical Society, reminded citizens of the health care services and facilities available to them in their communities. Another constructive step was taken in September of 1964 when representatives of the medical profession met with national leaders of official and voluntary health agencies, federated funds, business, industry, and labor to promote better understanding of problems that affect both lay and professional people.

The occasion was the National Vountary Health Conference, sponsored by the American Medical Association Council on Voluntary Health Agencies. To quote from the AMA News:

> "The voluntary health movement, an American phenomenon, has been a major factor in the achievements of American medicine, and voluntary participation by thousands of physicions at the national, state, and community levels has had much to do with its success. For many years physicians have been promoting the voluntary health movement by playing a variety of roles: as official representatives of medical societies; as individual physicians; and as private citizens interested in the health of the community.
>
> Whatever his role, the physician has much to offer the voluntary health agencies. The voluntary health movement has served to unite health professions and lay volunteers in attacking health problems and developing a mutual respect between the physician and layman by utilizing the talents of both.
>
> Informed medical guidance is needed by all health agencies, and the volunteer physician must keep informed on the medical programs of the agency which he serves so that he may provide effective leadership.
>
> Fulfilling this responsibility, as thousands of physicians are doing all over the nation, gives the medical profession the opportunity to provide leadership at the community level. Both medicine and the community benefit from such endeavors."

Ethics And Medical Experimentation

Everyone working experimentally with normal human subjects or with patients must remember not only his responsibility to the subject or patient but also his responsibility to the discipline of experimental medicine. One irresponsible experimenter can do greater harm to medical science. . . .

. . . nothing in this world is static . . . knowledge can be lost as well as gained. Research has made our knowledge great and can make it greater, but without research knowledge would fall away as it did in the Middle Ages. All our triumphs of today would be forgotten—they may be anyway—but without continuous research there will be nothing to take their place. Those who educate medical students and nurses should therefore emphasize to them the value of the experimental approach, and encourage them at some point in their careers to do something for the medical science of today and tomorrow by taking an active interest in experimental work. . . .

. . . the medical profession has a responsibility not only for the cure of the sick and for the prevention of disease but for the advancement of knowledge upon which both depend. This third responsibility can only be met by invesigation and experiment. . . .—R. A. McCance: The practice of experimental medicine. *Proc. Roy. Soc. Med.* 44: 189, 1950.

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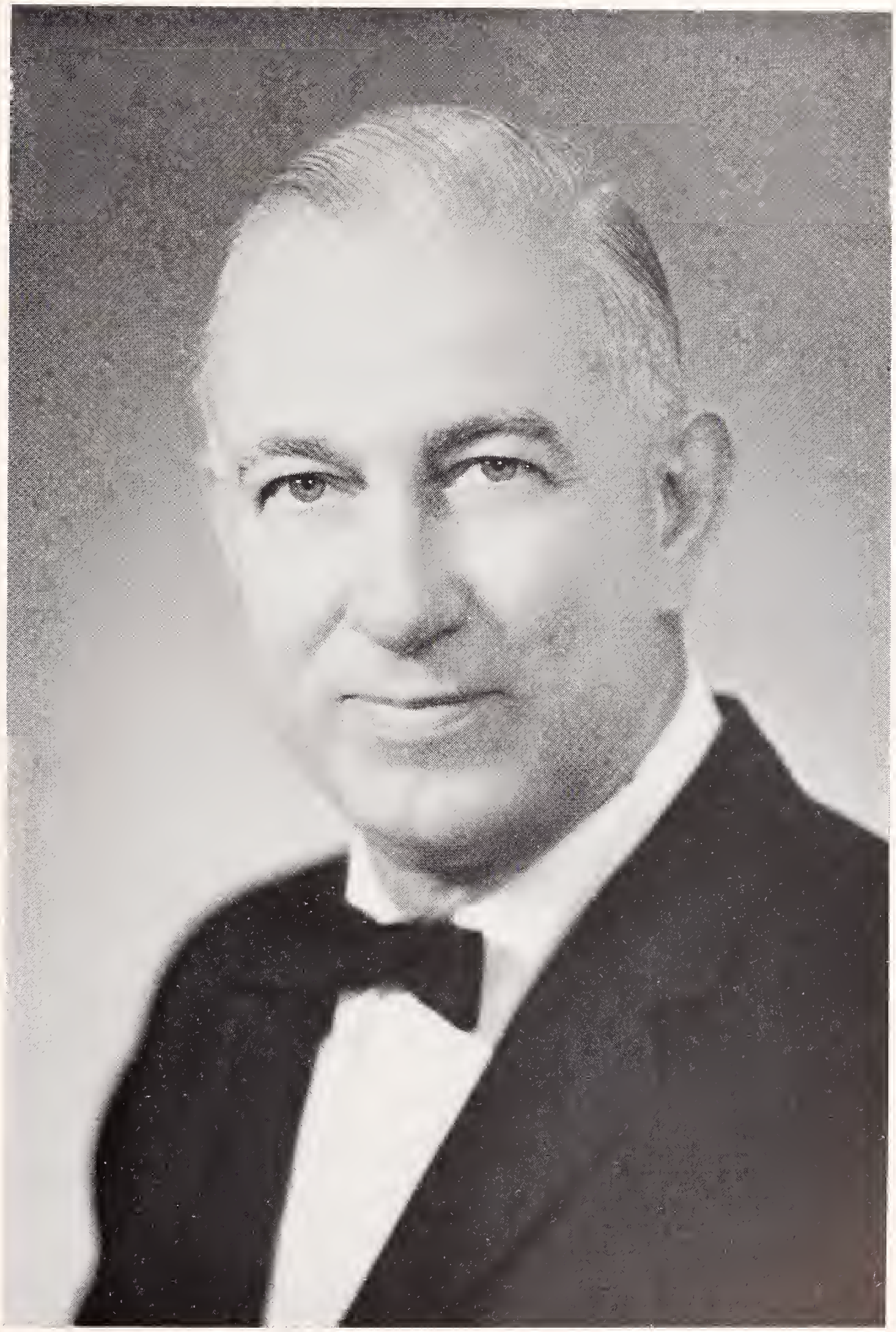

James R. Cullen, m.d.
President

THE PRESIDENT'S PAGE

I am grateful for the honor bestowed on me in electing me to the office of president of the Connecticut State Medical Society in this 173rd year of its existence. When one considers how few physicians have been elected to this office from the thousands of members of the society, it is a unique honor indeed and I am sincerely thankful.

This year, 1965, is a fateful one for physicians, since there will probably be enacted into law legislation vitally affecting medical care. Such bills have long been before Congress and the American people. Organized medicine has opposed this latest "Medicare" type of legislation providing health services for the over sixty-five citizens, because we believe it would not provide optimal health care for those who need it most and that it would place an added burden of taxation on those already heavily taxed.

The House Ways and Means Committee, *without public hearings,* drafted and reported out HR6675 early in April. This bill—an omnibus one—a massive (296 pages) piece of federally controlled health care legislation has additional increases in Social Security cash benefits, which will influence votes for the entire bill. The Committee and the President requested immediate action. The House passed HR6675 in two days with a vote of 313 to 115. The bill in its first year will cost 6.6 billion dollars and will be financed by raising the base of the Social Security taxes as well as increasing the rate in the next two years. The Senate is expected to act on this bill early in June.

Every physician should study this bill and express his views to his Senators now. HR6675 will move this country further toward state-controlled medicine than most people realize.

The final outcome of the struggle between medicine and the government is not difficult to predict, when one considers that government at local, state, and federal levels has for years been providing health services for selected segments of the population, e.g., tubercular, mentally ill, and veterans. It has allocated funds for construction of medical and nursing schools, hospitals, and for medical research and education. For decades our country has been in an era of change on all socio-economic fronts and these changes will continue. They can be modified but not stopped. Now, millions of Americans want health care paid for by the government for all who need it—the over sixty-five group is only the beginning. At this moment, it seems that the working public is willing to be taxed further for the health care of senior citizens and *eventually all citizens.*

Whatever the enacted law, it will have many shortcomings for all concerned; the person who needs the medical care and the physician, hospitals and all medical groups providing the care. To me one fact only is certain—that most of us will continue to care for the sick to the best of our ability in keeping with medicine's noblest ideals and that it will not be said of us that as physicians we are so busy contending for medicine that we forget to practice it.

JAMES R. CULLEN, M.D.

FROM THE GENERAL MANAGER'S OFFICE

William R. Richards, m.d., *General Manager*
160 St. Ronan Street, New Haven, Conn.
Telephone 865 0587

James G. Burch
Director of Public Relations

Josephine P. Lindquist
Assistant to General Manager

SUMMARY OF ACTIONS COUNCIL MEETING

Wednesday, March 24, 1965

I. Attendance

Present in addition to the Chairman, Dr. S. J. Martin, were: Drs. Gilman, Cullen, Hess, O'Connor, Goldberg, Brandon, Davis, Weise, Sr., Pitock, M. Caplan, Grendon, H. Caplan, Phillips, Shepard, Ciccarelli, Fabro, W. Martin, Spitz and Hastings. Also present: Mrs. Lindquist, Mr. Burch, Mr. Charles A. Hubbard (AMA) and Dr. Richards. Absent were: Drs. Gardner, Bradley, Egan, Hughes, Ayres, Rogol, Seigle, Epstein, Abbot and Major.

II. Routine Business

Approval Of Minutes

As printed and distributed, it was VOTED to approve the minutes of the meeting of February 18, 1965.

Life Membership

It was VOTED to approve applications for Life Membership of the following eligible Active Members:

Edward P. Allen, New Haven (NHCMA)
Neil A. Dayton, Andover (WCMA)
Harold T. Oesau, Bridgeport (FCMA)
Morris Glazer, New Haven (NHCMA)
Edwin R. Webber, Waterbury (NHCMA)

Election Of Student Member

It was VOTED to elect the following Connecticut resident to Student Membership in the Society:

Richard J. Lessow, West Hartford, Tufts University School of Medicine, Class of 1968.

Request—Annual Meeting Exhibit

Concerning a request of the Beacon Investing Co. to present the retirement plan sponsored by the Council of New England State Medical Societies at the 1965 Annual Meeting, it was VOTED to offer the Beacon Investing Co. such exhibit space at the usual rate of charge.

Report—PR Division

It was VOTED to approve a report of the PR Division which recommended renewal for one year the Society's contract with WBMI (FM), Meriden, to present the radio series "Doctor's House Call" and for other purposes, at a cost of $2345.

Date Of Next Meeting

It was VOTED to hold the next meeting of the Council on Wednesday, April 14, 1965.

III. Old, New And Special Business

Report—Connecticut Medicine Readership Survey

A report was filed on the opinions expressed by 1511 members who returned the "readership survey" questionnaire on Connecticut Medicine which was mailed to all members during January. A summary of the results is published elsewhere in this issue of the Journal. After reviewing the information derived from the survey, It was VOTED to direct the Chairman to appoint a committee to anlyze the results in detail and to make a report with recommendations to the Council concerning their significance with respect to the format of the publication.

Report—61st Annual Congress On Medical Education

It was VOTED to accept the report filed by Harold D. vonGlahn, Old Lyme, on the proceedings of this Congress, and to publish same in the Journal for the information of all members. Dr. vonGlahn is a member of the Committee on Medical Education and Licensure, and represented the Society at the four day meeting in Chicago, February 6-9.

Request—AMA Department On Medicine And Religion

By invitation, Mr. Charles A. Hubbard (AMA Department on Medicine and Religion) joined the Council to present the programs in this field which are being established throughout the country under AMA auspices and guidance. Noting that Connecticut was one of a very few states that did not have a centrally-operated program in existence, but that several local individuals and organizations here had expressed an interest in this work, he recommended that the Council consider forming a state committee to stimulate and guide such programs at county and local levels. In response to Mr. Hubbard's request, it was VOTED to direct the Chairman to appoint a committee of four CSMS members to study this proposed undertaking and make a report with recommendations to the Council concerning its implementation by the Society.

Reports—COMPAC

Concerning an AMA resolution that state medical societies coordinate their membership dues billings with similar billings for members of state political education and action committees, an opinion rendered by the Society's legal counsel stated that such coordination was permissable under certain procedural conditions. After considering several possible methods of having the Society cooperate with COMPAC in this regard, it was VOTED not to include COMPAC billings as integral parts of CSMS billings, but to offer gratis use of the office's addressograph system to assist COMPAC in mailing its dues statements to members of the Society.

It was VOTED to accept as information reports on COMPAC's activities, including the uses to which the Society's 1964 grant of $3,000 was put, as filed by Kenneth F. Brandon, Hartford, treasurer of the COMPAC organization.

Report—Committee On Preliminary Study Of Nominations

Including several amendments made by the Council, it was VOTED to accept the report filed for this Committee by its chairman, Ralph L. Gilman, President of the Society. The amended report will be presented to the House of Delegates for approval on April 27, 1965, and will be the official slate of the Society's Nominating Committee (The Council). A rising vote of thanks was given the Committee for its work in preparing the report.

Reports—Eldercare Educational Program

Reports on implementation of this program by the Society to date, through newspaper, radio, membership mailings, etc. were filed by the PR Director and the General Manager. In view of immediate developments on medicare-type legislation taking place in Washington, D.C., it was VOTED to accept the reports as information, and to await instructions from AMA before continuing with further educational efforts directed toward promoting the enactment of the Eldercare Bill (HR 3727).

Report—Ad Hoc Committee On Corporate Practice Of Medicine

David A. Grendon, Chairman, reported on this Committee's conversations with a Waterbury legal counselor concerning alternative actions which might be taken to deter or prohibit the practice of medicine by corporations, and payment for physicians' services by hospital service insurers. It was VOTED to accept the report and its recommendation that no legal course be embarked upon at this time. After the General Assembly has acted upon several bills to extend the authority of hospital service corporations, appropriate action will be determined.

Reports—Medical Economics Division

(a) In a report of the Committee on Medical Care of Veterans it was recommended that the Council authorize use of sections of the 1964 California Relative Value Study by the Committee "for the purpose of establishing fees for the medical care of veterans." Noting that it is not the policy of the Society to set *fees* for its members, it was VOTED to authorize the Committee on Medical Care of Veterans to use the California RVS *as a guide* to establishing a *payment* schedule in which covered services will bear a proper RV relationship to each other.

(b) In a report of the Advisory Committee to the State Commissioners of Welfare, Finance and Control, recommendations were made concerning revisions of the Welfare Payment Schedules for physicians' services. In intent, these were very similar to or identical with, recommendations made recently by the Committee on Third Party Payments but, in two instances, dollar values were suggested for application to certain objectives. It was VOTED to accept the report of the Committee, except to delete the words "of six dollars" from Item No. 3 and the words "three dollars" from Item No. 4, and to refer the report to the Committee on Third Party Payments as information.

Proposed Bylaw Amendment—Committee On Mental Health

The Committee on Mental Health recommends that the CSMS Bylaws be amended as follows:

(a) That the Committee be expanded to ten members, from the present eight.

(b) That there should be a majority of psychiatrists on the Committee. It is suggested that there be at least six but not more than eight members who are psychiatrists.

It was VOTED to refer this proposal to the Subcommittee to Study and Revise the Bylaws for evaluation and report.

Request—Appointment Of Advisory Committee

Pursuant to a request submitted by James S. Peters, II, M.D. Chief of the Bureau of Vocational

Rehabilitation, State of Connecticut, it was VOTED to direct the Chairman to appoint 8-10 CSMS members to serve as an Advisory Committee to the Bureau of Vocational Rehabilitation and the Disability Determination Unit of the Connecticut State Department of Education.

Recommendations—Committee On Public Health

(a) It was VOTED to write a letter of commendation to Governor John Dempsey for the positive action taken by the Public Health Council in adopting a regulation for the fluoridation of public water supplies.

(b) It was VOTED to adopt the Committee's recommendation that the Council reaffirm the Connecticut State Medical Society's long-standing position favoring the fluoridation of public water supplies under the supervision and control of the Commission of Health, and instruct the CSMS Committee on State Legislation to support this position at the General Assembly by testifying strongly in favor of fluoridation and strongly against all anti-fluoridation measures.

(c) It was VOTED to transmit to Health Comsioner Foote, as information, a recommendation of the Committee (submitted originally by the Committee on Rural Health) that an amendment be made to the Public Health Code requiring the testing of water from all new wells to be used for domestic purposes in order to further the health of the citizens of the State, and that this examination include proper bacteriological and chemical tests to insure the safety and quality of the water obtained from such wells.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on March 24, 1965. Detailed minutes of the meeting are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

Analysis—Connecticut Medical Readership Survey

During the month of February, 1965, a readership survey on Connecticut Medicine was conducted among all members of the Society. The Editor and Business Manager of the Journal wish to thank the 1511 physicians who mailed in their questionnaires for their opinions and, especially, to thank the many ladies of the Woman's Auxiliary who gave so generously of their time in order that a maximum return would be assured.

For the information of our readers, the following letter to the President of the State Journal Advertising Bureau, which reports on the results, is reproduced herewith:

"The Connecticut State Medical Society conducted a readership survey of its publication Connecticut Medicine in the month of February, 1965, using the enclosed questionnaire for that purpose. The survey was limited to the 3500 physician members of the Society, and was carried out by a direct mailing. Our current circulation is 3857.

Replies were received from 1,511 members, representing a 43 per cent response. The highest incidences of reply came from groups as follows (Question No. 1):

General Practice	274
Internal Medicine	251
Surgery	160
Neuro-Psych.	110
Obs.-Gyn.	110

In answer to Question 2:

Read the Journal "regularly" or "frequently"	949
Read the Journal "occasionally or "rarely"	547

To Question No. 3:

Rate the Journal articles "excellent" or "good"	1071
Rate the Journal articles "fair"	360
Rate the Journal articles "poor"	32

To Question No. 4:

Find the non-scientific material "informative"	1046
Find the non-scientific material "uninformative"	133
Find the non-scientific material "unnecessary"	213

To Question No. 5:

Read pharmaceutical ads (national) "regularly" or "occasionally"	745
Read pharmaceutical ads (national) "seldom"	722

To Question No. 6:

Read local ads "frequently" or "occasionally"	716
Read local ads "seldom"	740

To Question No. 7:

Professional journal preference (based on frequency of reply).

1. JAMA
2. N. E. Journal of Medicine

3. CONNECTICUT MEDICINE
4. Annals of Internal Medicine
5. Archives of Internal Medicine
6. S. G. & O.

To Question No. 8:

Prefer national authors	873
Prefer local authors	458

To Question No. 9:

Features liked best — more than 50 per cent of respondents named the editorials written by Louis H. Nahum, M.D., Editor of CONNECTICUT MEDICINE.

Features liked least—Mixed opinion here. About 50-50 division between scientific articles and non-scientific articles.

Features wanted — Too variable to draw conclusions."

SUMMARY OF ACTIONS COUNCIL MEETING

Wednesday, April 14, 1965

I. Attendance

Present in addition to the Chairman, Dr. S. J. Martin, were: Drs. Gilman, Cullen, O'Connor, Brandon, Weise, Sr., Gardner, M. Caplan, Bradley, Grendon, H. Caplan, Shepard, Rogol, Seigle, Fabro, Abbot, W. Martin, Spitz and Hastings. Also present were: Mrs. Lindquist, Mr. Chilcoat (AMA), Dr. M. David Deren (Chairman, CSMS Committee on Medical Economics and Insurance), Dr. Francis D. T. Bowen (Chairman, CSMS Medical Economics Division), and Dr. Richards. Absent were: Drs. Hess, Goldberg, Davis, Pitock, Egan, Phillips, Hughes, Ayres, Ciccarelli, Epstein, and Major.

II. Routine Business

Approval Of Minutes

As printed and distributed, it was VOTED to approve the minutes of the meeting of March 24, 1965, with one exception as follows:

It was VOTED to reconsider the action taken by the Council at that meeting which read: "It was VOTED not to support the (Public Health) Committee's recommendation concerning the mandatory and exclusive use of 1 per cent silver nitrate in the prophylaxis of gonococcal ophthalmia neonatorum."

Subsequently, after receiving additional information on this subject from Max Caplan, Meriden, and from the State Department of Health, it was VOTED that the Council support the continuance of present policies of the State Health Department concerning the use of 1 per cent silver nitrate for the prophylaxis of gonococcal ophthalmia neonatorum.

Life Membership

It was VOTED to approve applications for Life Membership of the following eligible Active Members of the Society:

Arthur B. Dayton, Hamden (NHCMA)
Johann Kertesz, New Haven (NHCMA)
Johanna Waldemar-Kertesz, New Haven (NHCMA)

Election Of Student Member

It was VOTED to elect the following Connecticut resident to Student Membership in the Society:

William E. Allen, 100 Bradley Avenue, Fairfield
University of Tennessee School of Medicine, Class of 1967.

Report—Representative To The AMA 2nd National Congress On Mental Illness

It was VOTED to accept as information, and with commendation, the report filed by James C. Johnson, Jr., Hartford, on the proceedings of this Congress, Chicago, November 5-7, 1964. Dr. Johnson is a member of the CSMS Committee on Mental Health, and attended the meeting as a representative of the Society. Copies of the report will be furnished to all members of the Committee on Mental Health, and to others who may request same.

Date Of Next Meeting

In accordance with the Bylaws, the President shall call a meeting of the Council "as soon as possible after the Annual Meeting of the House of Delegates, and shall preside at this meeting until the Council elects its Chairman (for 1965-66)."

III. Old, New And Special Business

Annual Reports—Council-elected Committees, Representatives And Advisors

The General Manager presented a review of all the annual reports filed by these Council-elected individuals and groups. It was VOTED to accept this review as information, and to approve specific recommendations of the Committee on Emergency Medical Service as follows:

1. That the Society endorse the Connecticut Hospital Association's radio communication plan for the State.

2. That the name of the Committee be changed to the "Committee on Disaster Medical Care".

It was further VOTED to notify the Connecticut Hospital Association of the action taken on the first recommendation, and to refer to the Council's Subcommittee to Study and Revise the Bylaws, for study and report, the action taken on the second recommendation.

Report—Committee On Medical Economics And Insurance

M. David Deren, Bridgeport, Chairman of this Committee, joined the Council to present in person four proposals as follows:

1. CSMS "Group" Plan for Blue Cross Enrollment: Dr. Deren reported that it would be possible for the Society to sponsor "group" enrollments in Blue Cross, provided that a single plan be offered and that at least 75 per cent of the membership signed up. Such an arrangement would be to the advantage of some 1200 members who are now enrolled as individuals, but might have a disruptive effect on already established "groups" at county, local and hospital staff levels.

It was VOTED to accept this report as information, and to request the Committee on Medical Economics and Insurance to pursue its study of this matter, especially from the standpoint of how such an arrangement might be worked out in harmony with existing "groups".

2. CSMS-Sponsored Life Insurance Plan: Dr. Deren outlined the conditions of enrollment, benefits, premiums, and other features of a Life Insurance Plan now available to members of the New Haven County Medical Association through Group Insurers, Inc., New Haven. On the Committee's recommendation, it was VOTED to authorize the Committee to arrange with Group Insurers, Inc. to offer the same plan to all members of the Society, and to grant sponsorship of the Society to such Life Insurance Plan.

3. Society-Sponsored Major Medical Plan: Dr. Deren submitted certain changes as to the benefits and premiums of the Major Medical Plan which the Society sponsors, all of which had been reviewed and approved by the Committee. On the recommendation of the Committee, it was VOTED to approve these changes being made in the Plan.

4. "Umbrella" Type of Malpractice Coverage: Dr. Deren outlined a new concept in malpractice coverage which, at relatively small cost, would furnish an "umbrella" of protection (up to $1 million) above the basic $100,000/$300,000 protection that most members now carry. It was VOTED to request the Committee to pursue its study of this matter, and to make recommendations to the Council concerning it.

It was further VOTED to thank Dr. Deren and the Committee on Medical Economics and Insurance for bringing these matters to the attention of the Council.

Report—Ad Hoc Committee On Resolution No. 2

It was VOTED to accept the report filed by E. Tremain Bradley, Chairman, for the Ad Hoc Committee on Resolution No. 2 (House of Delegates, December 4, 1962), to commend the members of the Committee for their work, and to transmit the report to the House of Delegates on April 27, 1965 with the recommendation that the report be accepted and its recommendations implemented.

Report—Committee On Third Party Payments

It was VOTED to accept the report filed by the Committee on Third Party Payments (as amended by the Council) concerning recommended uses of a Relative Value Scale (if adopted) by the Society, its members and other agencies. It was further VOTED to transmit the report to the House of Delegates on April 27, 1965 as an integral part of the Council's final report to the House on the CSMS Relative Value Study.

Report—Medical Economics Divisional Board

Francis D. T. Bowen, Chairman of this Divisional Board, joined the Council to clarify certain sections of the report of the Board on which action was deferred from the March 24 meeting. Since Dr. Bowen assured the Council that no changes (in dollars) in the VA schedule of payments were recommended by the Committee on Medical Care of Veterans, it was VOTED to accept the Divisional Board's report as information, and to advise the Chairman that the Committee on Medical Care of Veterans is authorized to meet with representatives of similar committees of the other New England state medical societies for the purpose of discussing matters of mutual interest, and that the Divisional Board is authorized to prepare and publish a "question box" on medical economic subjects in the Journal with the understanding that the effectiveness and value of the project will be assessed at the end of a twelve months' period.

Report—"Five-Year Plan"

Having received and reviewed the final draft of "A Five-Year Plan for Chronic Illness Control and Health of the Aging Activities, Connecticut", as submitted by Harold S. Barrett, Director of the project, it was VOTED to endorse the Plan, in principle, and to recommend strongly that, as far as possible, existing community agencies and personnel within the State of Connecticut be utilized maximally in implementing the Five-Year Plan, when and if such implementation is contemplated.

Reports—Committee On Hospitals

Actions were taken on two reports submitted by the Committee on Hospitals as follows:

1. With several minor amendments, it was VOTED to accept the Committee's report on "The Points System of Rating Convalescent Hospitals and Nursing Homes", and to request the Chairman of the Committee on Hospitals to appoint a subcommittee of committee members to meet with the State Commissioner of Health for the purpose of discussing the medical aspects of the "points" system (Example: Giving points for the use or recorded use of instruments such as catheters, IV sets, oxygen therapy, etc.).

2. It was VOTED to accept, with commendation, the supplementary report of the Committee on the subject of "Hospital Costs and Accounting Procedures" (as requested by the House of Delegates on April 28, 1964) and to transmit the report to the House of Delegates on April 27, 1965 with the recommendation that the House take similar actions. It was further VOTED to recommend to the House of Delegates that authorization be given to publicize the report widely through all media of communication, under the direction of the Public Relations Division.

Communication—Middlesex County Medical Association

It was VOTED to receive as information a resolution adopted by the members of MCMA at their annual meeting on April 8, 1965, and that copies be furnished to all members of the CSMS Advisory Committee to the State Commissioners of Welfare, Finance and Control. The resolution embodies a statement in critical evaluation of the recent (April 1, 1965) directive of the State Welfare Department concerning rules and regulations for the care of welfare beneficiaries by physicians.

Progress Report—Ad Hoc Committee On General Practice Resolution

It was VOTED to accept, and transmit to the House of Delegates on April 27, 1965, a progress report filed by the Council's Ad Hoc Committee on General Practice Resolution (House of Delegates, April 28, 1964).

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on April 14, 1965. Detailed minutes of the meeting are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

NEW MEMBERS

New Haven County

Boris M. Astrachan, New Haven.
Nicholas T. Catanuto, Orange.
Charles D. Cook, New Haven.
Anthony Donovan, Milford.
William H. Gallaher, Orange.
Siegfried J. Kra, New Haven.
William B. Lyons, West Haven.
Frank P. McKegney, Jr., New Haven.
Lowell E. Olson, New Haven.
Lawrence K. Pickett, New Haven.
Marc D. Schwartz, New Haven.
Paul A. Sirop, Waterbury.
Alfred Zettner, New Haven.

New London County

Larry Coletti, Norwich.
William J. Hostnik, New London.
George A. Sprecace, New London.
Joseph P. Wierzbinski, Norwich.

PLACEMENT OPPORTUNITIES

SENIOR PHYSICIAN for the Medical Service of the Connecticut Valley Hospital. Must have Connecticut license. Salary range $11,640 to $15,080—but could start above the minimum if properly qualified. Housing and other fringe benefits. Contact Superintendent, Connecticut Valley Hospital, Middletown, Connecticut—347-5651.

PRACTICE FOR SALE—six room office, semi-attached four bedroom house. Long established practice in southwest Connecticut. Ideal for G.P. or Internist.

PUBLIC HEALTH PHYSICIAN—Opening for community health department; generalized clinical and administrative duties; entry position to field of public health. Liberal benefits. No age or sex requirements. Connecticut license or eligibility for license required. Apply directly to Dr. Norton G. Chaucer, Director of Public Health, 56 Coventry Street, Hartford, Connecticut. Salary open.

CONNECTICUT LICENSED M.D. as Full Time House Officer for 5-day week in an expanding accredited hospital. Salary $12,000 a year. Reply to: The Park City Hospital, P.O. Box 638, Bridgeport, Connecticut 06601.

G.P.—wishes partner for large practice in a large town in eastern Connecticut.

INTERNIST—Rare opportunity for young man. Internist in Stamford, Connecticut desires to share his well-equipped office with compatible colleagues. Available October 1st.

ANYONE INTERESTED IN THE ABOVE IS ASKED TO CONTACT THE GENERAL MANAGER'S OFFICE, 160 ST. RONAN STREET, NEW HAVEN.

SUMMARY OF PROCEEDINGS
HOUSE OF DELEGATES — ANNUAL MEETING
Hartford, Connecticut — April 27, 1965

Reports, Addresses And Remarks

Reports

The Secretary: Dennis S. O'Connor, New Haven
The Treasurer: Isadore S. Goldberg, Torrington
The Council: Stevens J. Martin, Hartford, Chairman
The General Manager: William R. Richards, New Haven

Addresses

The retiring President: Ralph L. Gilman, Storrs
The incoming President: James R. Cullen, Hartford
The President, CSMS Woman's Auxiliary: Mrs. Charles M. Krinsky, New London

Remarks

State Society Delegates to CSMS: Henry L. Fineberg, New York; Freeman B. Agnelli, R. I.

These presentations, if submitted in writing, will be published in Connecticut Medicine.

* * * *

Election Of Officers And Committees, 1965-66

The following officers were elected:

President: James R. Cullen, Hartford
President-Elect: Orvan W. Hess, New Haven
Vice-President: E. Tremain Bradley, Norwalk
Secretary: Waldo E. Martin, Milford
Treasurer: Isadore S. Goldberg, Torrington
Speaker of the House: Kenneth F. Brandon, Hartford
Vice-Speaker of the House: Jachin B. Davis, New Haven
AMA Delegate: Norman H. Gardner, East Hampton (January 1, 1966-December 31, 1967)
Alternate AMA Delegate: Michael A. Dean, Bridgeport (January 1, 1966-December 31, 1967)
Councilor-at-Large: Morris P. Pitock, Bridgeport

Members of Divisional Boards and Committees and others elected or confirmed by the House of Delegates will be listed in the "Roster" to be published as a supplement to the August, 1965 issue of Connecticut Medicine.

Presentations And Awards

AMA-ERF: by Dr. Gilman

A check in the amount of $8,142.18 was presented to Arthur Ebbert, Associate Dean of the Yale University School of Medicine, who accepted the grant on behalf of the School.

CSMS Press Awards: by Dr. Cullen

Press Awards were made as follows:

To Donald C. Byers, *The New Haven Register* (Feature writing).

To Stanley J. Venoit, *The New Haven Register* (Medical news reporting).

To Charles J. McGill, *The Bridgeport Post Telegram* (Editorial writing).

To Miss Brenda Vumbaco, *The Catholic Transcript* ("Award of Merit" for feature writing).

Past President's Pin: by Dr. Martin

A pin in recognition of his services to the Society as President during 1964-65 was presented to Ralph L. Gilman, Storrs, by Stevens J. Martin, Chairman of the Council.

50 Year Membership Awards: by Dr. Cullen

The following physicians received certificates and pins in recognition of 50 years of membership in the Society:

Hugh B. Campbell, Norwich
Jacques H. Green, North Haven
Frederick H. Hynes, New Haven
Maxwell Lear, New Haven
Harry L. F. Locke, Hartford
Herbert Thoms, Stony Creek

Reports Of Committees And Divisional Boards

As printed in the Delegates Handbook, and as supplemented by printed and verbal reports of Divisional Board Chairmen, the annual reports of all standing and special committees of the Society were accepted by the House. In the main, these reports consisted of summaries of the activities of the various Committees and Boards during the preceding year. Those receiving special note were:

Committee On State Blood Bank

On recommendation of this Committee, the House voted to "commend Dr. J. C. Early, Director of the State Blood Bank, for the superlative functioning of the Blood Bank under his direction."

Committee On Third Party Payments

In adopting the "Report of the Council," the House learned that the Advisory Committee to the State Commissioners of Welfare, Finance and Control (plus added members) is presently engaged in implementing recommendations of the Committee on Third Party Payments as follows:

Revision Of Welfare Payment Schedules

(1) That the Society reopen negotiations with the Welfare Department on all its (medical care) programs.

(2) That the Society urge the establishment of separate payment schedules for: (a) General welfare programs; and (b) for MAA (Kerr-Mills) and/or other Federally-initiated programs.

(3) That the Society seek to have the "night call" rates of the Welfare payment schedules apply during the hours from 7:00 P.M. to 7:00 A.M., instead of the present 10:00 P.M. to 7:00 A.M.

(4) That the Society seek to revise the Welfare schedules so that the increased rates of payment for "night calls" will be the same for general practitioners and specialists.

(5) That the Society authorize the use of an accepted Relative Value Scale (the Society's, when available) for the purpose of bringing internal relationships into harmony not only through application to the present Welfare payment schedules, but also to other government programs of medical care, existing and projected. The matter of suggesting dollar coefficients to be applied to the RV units is not an integral part of this recommendation at this time.

(6) That the Connecticut State Medical Society adopt as official policy the position that whenever government (Federal, State or Local) assumes responsibility for the payment of medical care costs, the principle of reduced or substandard payments (for physicians' services) shall not apply.

Medical Economics Divisional Board

Reporting for this Divisional Board, Francis D. T. Bowen, Chairman, emphasized the following: "From the deliberations of the Board on January 27, and from the reports of the Division (committees) before you today, it is clear that an urgent need is felt to exist for the formal adoption of a Relative Value Schedule by the Connecticut State Medical Society." . . . "Under each section of this . . . report, it will be noted that strong reference has been made to a Relative Value Schedule. The members of the various committees . . . represent a substantial cross-section of the physicians of the State Society, (and it is their feeling) that this subject merits primary consideration (by the House of Delegates)."

Old Business

(1) Amendment To The Bylaws

Taken off the table (from the previous meeting), it was voted to amend the CSMS bylaws as follows:

Article X—Committees Of The Council

Section 2—Standing Committees of the Council

Par. 1. *Outline.* Separate "Delegates to State Medical Societies and Special Societies" to read "Delegates to State Medical Societies" and "Delegates to Special Societies."

Par. 13 (amend to read) *Delegates to State Medical Societies.* The Council shall elect annually two delegates each to the following state medical societies: Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont. The delegates elected shall be members of the Council at some time during the four years preceding their election. The terms of office of all such delegates shall be for one year, beginning July 1. The duties of these delegates shall be to attend meetings of the state medical societies to which they are assigned, to act as official representatives of The Society at such meetings, and to file informative reports with the Council on the proceedings of such meetings.

Par. 14 (add new paragraph) *Delegates to Special Societies.* The Council shall elect annually one delegate each to the Connecticut Hospital Association, the Connecticut Pharmaceutical Association, the Connecticut State Dental Association and the Connecticut State Nurses Association. The terms of these delegates shall be for one year, beginning at the annual meeting of The Society. Delegates to the named special societies shall either be officers of The Society or committee chairmen or members who are knowledgeable of the work of the special society to which they are delegates. The duties of these delegates shall be to attend meetings of the special societies, to act as official representatives of The Society at such meetings, and to file informative reports with the Council on the proceedings of such meetings.

Renumber present paragraphs 14 and 15 to become paragraphs 15 and 16.

(2) Supplementary Report: "Hospital Costs And Accounting Procedures"

Prepared by the Committee on Hospitals, the Council submitted to the House a report on these matters which was supplementary to an initial report filed at the Annual Meeting in 1964. On recommendation of the Council, it was voted to accept this report, with commendation to the Committee on Hospitals, and to approve a proposal that it be widely publicized through all media of communication under the direction of the Public Relations Division. Pursuant to this proposal, all members of the Society will receive printed copies of the report in the near future.

(3) Final Report: House Of Delegates Resolution No. 2, (December 4, 1962)

Prepared for the Council by an Ad Hoc Committee, the House received a report which outlined 14 features which it is felt should be included in all prepaid medical plans in order to serve "the people of Connecticut as efficiently and equitably as possible in the areas of health insurance and prepayment for physicians' services," and also made recommendations concerning the establishment of "review committees" at county medical association level and certain other matters. It was voted to accept the report, commend the Ad Hoc Committee for its work, and to direct the Council to implement the recommendations contained in the report.

It is anticipated that this report will be published as a supplement to an early issue of Connecticut Medicine, and thereby be available for study by all members of the Society.

(4) Progress Report: House Of Delegates Resolution On General Practice (April 28, 1964)

The House received a report from the Council on the progress its Ad Hoc Committee is making toward increasing postgraduate education opportunities in general practice in Connecticut, with a view toward increasing the number of medical school graduates who will pursue family practice as a career. It was voted to accept this report as information.

(5) Final Report: CSMS Relative Value Study

The Council presented to the House a three-part "package" report on the CSMS Relative Value Study, and recommended its adoption. In essence, the report consisted of the following:

(a) That the Society adopt the "1964 Relative Value Studies, 4th Edition, California Medical Association," with certain amendments to the section on Medicine being noted.

(b) That the report and recommendations of the CSMS Committee on Relative Value Study be approved.

(c) That the uses of a Relative Value Schedule by the Society, by its members, and by other agencies, as recommended by the CSMS Committee on Third Party Payments, be approved.

After lengthy discussion, the House voted to adopt the entire report presented by the Council. This means that the Connecticut State Medical Society now has an official Relative Value Schedule, and that, in accordance with the recommendations of the Council, its limited use is authorized for and by individual members, CSMS committees, county medical associations and others. One specific recommendation that will be implemented without undue delay, read as follows: "That a copy of the Relative Value Schedule adopted by the House of Delegates be furnished by the Society to each CSMS member, accompanied by a covering letter which suggests that he familiarize himself with the document and examine his own fee structure in terms of the listed relative value units for the services he performs."

New Business

Resolution: The Connecticut Medical Political Action Committee

On a resolution introduced from the floor, it was voted to adopt the report of a Reference Committee as follows:

IT IS MOVED: That the House of Delegates of CSMS advise the Council to consider donating a sum of money to COMPAC for educational purposes (with the approval of legal counsel).

REPORT OF THE PRESIDENT

Today marks the end of my term of office as President of the Connecticut State Medical Society. For this honor and privilege, I am deeply appreciative. I have tried to carry out the duties and responsibilities to the best of my ability. Whether I have satisfactorily met these obligations and justified the confidence you placed in me, is for you to decide.

It has been a busy year. In addition to attending the regular sessions of the Council, there have been several meetings of sub-committees of the Council that have required considerable time. I have been your official delegate to the Annual Meetings of the Connecticut State Dental Association, the Connecticut Nurses' Association, the Massachusetts Medical Society, and the Medical Society of the State of New York. Last June, I attended the Annual Conference of the State Presidents and Other Officers held in conjunction with the convention of the American Medical Association in San Francisco. In January, Dr. Isadore Friedberg of Hartford and I were your official delegates to the National Conference on Kerr-Mills held in Chicago. And last, but not least, I have attended all but two of the Semi-Annual and Annual Meetings of the eight county associations.

For me, personally, all of this has been a pleasant and rewarding experience, and I am grateful for the opportunities I have had to meet many fine physicians from all over the country—men in similar responsible positions, facing many of the same problems in their states, and sincerely dedicated to the high ideals of a progressive, self-disciplined, honorable and free medical profession.

Today also marks the termination of twelve consecutive years of service on the Council. This span embraces the years before and since 1958 and includes all the years of the controversy with Connecticut Medical Service. To say just this is to indicate that the course has been far from smooth and calm. There has been a lot of rough water with much pitching and rolling of our ship. Battered from the outside by political and socio-economic forces seeking to shackle the free practice of medicine as we have known it, and place it under governmental control, we, at the same time, have had to contend with internal differences which have divided us and made it difficult to set and steer a course which truly represents the views of the great majority of our members. I believe that we have made good progress in this respect, but there are still some unhealed wounds. Some of the officers and members of the small county associations, while acknowledging that the will of the majority must prevail, nevertheless, and with some justification, feel that their opinions have too often been given scant consideration and that the large county delegations have occasionally ridden rather rough shod over them.

The remedy for this lies, as I see it, in the hands of the officers and leaders of *all* the county associations. They must see to it that delegates to the county meetings are physicians who are willing to take the time to go, that they are impressed with the importance of learning what the other fellow thinks about the various problems, and that they are notified sufficiently ahead of time to be able to arrange their schedules so they can go. Only by a much greater exchange of visits between counties than we have ever had can we hope to achieve the more nearly uniformity of purpose which we must have if we are to stand united against the continuing and incessant onslaughts from those who would make us merely paid servants of the government.

I would be most remiss if I did not mention with grateful appreciation all the assistance and encouragement I have had during the year from our General Manager, Dr. Richards, and his capable staff. I must also mention specifically the Assistant to the General Manager, Mrs. Josephine Lindquist. Between them, they have handled a lot of details in correspondence and furnishing information. Without them, the President would flounder around very inefficiently at times.

Finally, I extend to my successor, Dr. James Cullen, and to his fellow officers, my very best wishes for a pleasant, rewarding, and successful term of office during the coming year. They will have many problems, both old and new, with which to contend. Knowing them as I do, I can assure wou the affairs of our Society will be in very capable hands. So Good Luck and Au Revoir.

Respectfully submitted,

Ralph L. Gilman, m.d.
President.

REPORT OF THE COUNCIL

James Bryce once said that "Medicine is the only profession that labors incessantly to destroy the reason for its own existence." It is my belief that, in the home and the office—in the hospital and the laboratory, most physicians and their paramedical colleagues work continuously—and with the highest motivation—to exemplify Bryce's profound observation. It is therefore particularly difficult for me—as I am sure it is for many others—to understand why, in this year of our Lord, 1965, medical men are being called on to labor equally hard for the *survival* of their profession as a free and unregimented calling.

On every hand, it seems, someone is coming out with a new scheme which—it is claimed—will improve health care in the United States. In all too many instances, it appears that these schemes have been developed without either the advice or consent of the practicing American doctor. In other words, to paraphase the immortal saying of movie producer Samuel Goldwyn, we are mostly being "included *out*!"

Neither your Council nor your committees, nor similar bodies of other state societies and the American Medical Association, have been neglecting their obligation to advance the science of medicine or their objective to benefit the public health. However, it is a fact that a great deal of the business of the Council during the past year—and, particularly, in the last four months—has been related to matters which perhaps seem quite far afield to the busy practitioner directing his energies rather exclusively to the care of patients. It will be my purpose in this report to place greatest emphasis on some of these *major* items, hoping that you have all familiarized yourselves with the *total* picture through reading your copies of the minutes of each Council meeting which are mailed out regularly by the General Manager.

Since the last meeting of the House on December 9, 1964, the Council has met four times. Attendance has averaged 20 or more out of a possible *30* members (Dr. Max Caplan of Meriden having succeeded Dr. James R. Cullen of Hartford as an AMA Delegate and become an added member on January 1st.) The sessions have been lengthy, the discussions full and sometimes a bit heated, and conclusions reflective of the views of the majority. In passing, may I remind you that our required quorum is 16, with at least one representative from at least five component county associations being seated. Bringing to an end these general remarks, I will now proceed with some specifics.

The Five-Year Plan

Last September, the Council was asked to endorse a so-called "Five-Year Plan for Chronic Illness Control and Health of the Aging Activities" for Connecticut, the document having been prepared by an ad hoc group of some 150 people (representing many private and public health agencies) under a grant from the United States Public Health Service. As I reported to the House at its last semi-annual meeting, the Council voted not to endorse the Plan at that time, but to seek clarification of a number of conclusions and recommendations contained therein.

As a consequence, and at Health Commissioner Foote's suggestion, several members of the Council joined with previously-appointed members of the Society to form an advisory committee to the project. After many hours of concentrated study and editing, the Plan's original draft was rewritten in almost every one of its 13 sections, shortened considerably, and was presented again for the Council's evaluation at our last meeting on April 14th.

The Council members found the revised report to be much more understandable than the earlier version, and concluded that the stated objectives of the Plan were now more in keeping with the views held by most practitioners. On this account, it was voted to endorse the Five-Year Plan, *in principle,* and to recommend strongly that, as far as possible, existing community agencies and personnel be utilized maximally in implementing this program, if and when such implementation is contemplated.

For emphasis, may I remind you that the Council's reservations about the Plan (as originally presented) stemmed from concern that, under it, a central government agency might be set up in Connecticut with authority to "coordinate" the work being done right now by voluntary agencies and, eventually, to impose controls on even the efforts of practicing physicians to deal effectively with the problems of chronic illness and those peculiar to the aging. In the final draft, we believe that this undesirable possibility has been eliminated.

Hospital Planning

In your printed Handbook, the Committee on Hospitals reports at some length on its activities to explore the relatively new field of hospital planning, both at local and state levels. Whatever any of us may think about this subject, it is fair to say that comprehensive programs for the planning of health facilities are likely to be with us from now on, and that they cannot and must not be ignored by the practitioner of medicine. For this reason, and at the recommendation of the Committee on Hospitals, the Council has urged each county medical association to seek to participate in any such planning known to be going on in its area of jurisdiction. At the state level, we have on several occasions invited the Connecticut Hospital Association to invite the Medical Society to furnish representatives to participate in the CHA's present planning activities, but, thus far, our invitations have elicited only thanks for offering them. We have been assured, however, that it is the intent of the Hospital Association to seek our active participation when and if its committees develop a planning program acceptable to its member institutions. Unquestionably, we will hear more about this subject—much more—in the future.

The 1965 General Assembly

As you know, this is a legislative year in Connecticut. The fact that the General Assembly got off to a late start (because of the struggle over reapportionment) seems not to have deterred our lawmakers in the least from filling the legislative hopper to overflowing with bills on every imaginable phase of our social, economic, legal and medical life. I imagine that Dr. Isadore H. Friedberg of Newington, who chairs our Committee on State Legislation will supplment the published report of his Committee by informing you at this meeting of the more important bills on which the Society has taken a position. Not wishing to duplicate Dr. Friedberg's remarks, I will report on only one matter of state legislation which the Council considered to be of special importance.

As at the 1963 Assembly, companion bills were introduced this year which provide for the extension of the authority of hospital service corporations. In the statement on these measures presented for the Society by Dr. Grendon (who—and not entirely by coincidence—happens to be chairman of the Council's Ad Hoc Committee on the Corporate Practice of Medicine), we expressed our firm support for the objectives of the proposed legislation which, in brief, are to enable a hospital service corporation to offer prepaid coverage of hospital-type services which may be rendered to patients outside the hospital; i.e., in convalescent facilities, in the home and at other places far removed from the hospital premises. I do not need to remind you that the Society's support of such extended coverage is traditional. Equally traditional, however, is our position that the services of a doctor of medicine are *medical* services—*not* hospital services —and on this account, Dr. Grendon (speaking for the Council) urged the Assembly's Insurance Committee to make this distinction absolutely clear in the language of the bill, and further testified that, if this were done, the Society would have no reservations whatever in its firm support of the proposal. We can now only wait to learn whether a wise course of action will be taken by the Assembly in this matter.

Instant Communications

In January, the Council voted to authorize the installation of a teletype machine at St. Ronan Street, the purpose of which is to hook up our headquarters directly with the offices of the American Medical Association and every state medical society in the continental United States. The final wire was connected in early February and our experience to date suggests that this machanism for "instant communications" is a most valuable asset. At the direction of the General Manager, all significant messages received on the TWX have been promptly reproduced and distributed to the secretaries of the component associations and other key people throughout the State. In national legislative activities, particularly, this procedure has enabled more people to dispatch more letters and telegrams to the members of Congress more promptly than ever before. In addition, a rapid exchange of information on many routine matters has been effected and, since AMA bears all costs except those for outgoing messages, we believe we have acquired a very useful communications device for a very modest outlay of the Society's funds.

Committee On Public Health

Earlier in this report, I stated that the Society had not been neglecting its work to advance the public health. Published in your Handbook, the report of the Committee on Public Health summarizes an impressive list of activities engaged in by that parent committee and its several advisory sub-groups. Examples of major public health recommendations which the Council adopted were:

(a) Recognizing that the incidence of venereal diseases is on the increase, the Council published in CONNECTICUT MEDICINE a resolution urging all physicians to report all diagnosed cases of gonorrhea and syphilis, in accordance with State law, and to cooperate with local health officers in locating, examining and treating all suspected contacts, whenever necessary.

(b) Recognizing that cases of the abused or "battered" child syndrome are increasing in number, the Council directed the Committee on State Legislation to support a bill in the 1965 General Assembly, requiring that such cases be reported to the Commissioner of Health, and assuring that the reporting physician receive proper immunity from civil action for compliance. Current rumors indicate that the Assembly will act favorably on this legislation.

Welfare Department—Policies And Payment Schedules

On January 20, it was voted to communicate to the Commissioner of Welfare the deep concern of the Council at the potential disruption of the patient-physician relationship which a new directive of the Department would appear to be courting, and to request from the Commissioner a full explanation of his intent. The new policy, effective January 1st, authorizes the Assistant Medical Director to review the charts of welfare beneficiaries who have been resident in general hospitals for ten days or longer, and to make recommendations for "discharge" of such cases in which he finds that "definitive medical or surgical general hospital care has been completed. and so notify the district welfare office for appropriate follow-up."

Having received a lengthy letter in explanation of this policy, at the February meeting it was voted to inform Commissioner Shapiro that the Council continued to find several objectionable features in his directive, and urged that a meeting be held at an early date to discuss these areas of objection and attempt to resolve them in a mutually satisfactory manner. The duty of meeting with the Commissioner for these purposes has been assigned to the Advisory Committee to the State Commissioners of Welfare, Finance and Control. We hope to receive an encouraging report in this matter from that Committee in the very near future. Parenthetically, I might add that the concern of the Council over this state-issued directive is likely to be expanded if the Congress passes the Federal medicare bill as presently written, because the so-called "hospital insurance" part of that legislation gives a review committee the authority to examine private patients and their charts and to order their discharge or, at least, to stop payment of benefits for additional hospital care.

The Committee on Third Party Payments filed with the Council a comprehensive report with recommendations concerning suggested revisions in the Welfare Department's payment schedules under OAA, MAA, and other programs of tax-supported medical care. On pages 15 and 16 of your printed Handbook, you will find published the substance of this report and its recommendations. Approved by the Council, the Advisory Committee to the Commissioners of Welfare, Finance and Control, augmented by representatives of the Council, the Committee on Third Party Payments, and others, have been assigned the somewhat overpowering task of attempting to gain the Department's compliance with all or most of these recommendations.

I would like to place particular emphasis on two points of this report:

(1) That in authorizing the use of a Relative Value Schedule *as a guide* to revising these payment schedules, *no recommendation whatever* is made concerning the application of a conversion factor at this time. The Council believes that the Society should not set fees for any of its members, and that to authorize converting units into dollars might tend to do just that.

(2) That the Society adopt as official policy the position that whenever government (Federal, State or Local) assumes responsibility for the payment of medical care costs, the principle of reduced or substandard payments shall not apply. In the face of impending state medicine, under the Social Security medicare program and others, it is clear that the adoption of such an official policy now would have not only immediate but also long-range value in our attempts to prevent government from setting fees for physicians' services on a "reasonable cost" basis, which is even now being suggested on the banks of the Potomac.

Health Legislation For The Aged

It is my impression that the General Manager, the chairman of the Committee on National Legislation, Dr. Ellwood C. Weise, and others will bring you up-to-the minute information on the status of the falsely-named medicare bill, a subject which is—or should be—of the deepest concern to every physician who calls himself a thinking man. I would, however, like to assure the House that the Council has done all in its power to influence professional, public, legislative and political opinion in favor of Medicine's position on this dangerous measure. In cooperation with the AMA, we have used our time, our ingenuity, and our material and financial resources toward this end. In most areas, we believe we have had considerable success in getting our views across. But the power and influence of the White House on the Congress today are not easily overcome. I cannot report to you that the picture is very bright—or even very hopeful—that statesmanship will be able to stand up against such political pressure much longer, if at all.

Revision Of The Bylaws

From time to time, the Council receives suggestions or recommendations that the bylaws of the Society be amended. Such recommendations may concern changing the name of a committee, altering its membership, and so forth, or may deal with re-evaluating the criteria for exemption from payment of dues and the like. In each instance, the Council refers these matters to its Subcommittee to Study and Revise the Bylaws for study and report.

In your printed Handbook, under Item 10 a. of Old Business, you are asked to take off the table and act upon an amendment to Article X of our bylaws concerning the election and duties of delegates of the Society to other state medical societies and to special societies. When this item of business comes before you today, the Council recommends that this amendment be adopted as published.

Supplementary Report: Hospital Costs And Accounting Procedures

As in previous years, our Committee on Hospitals has devoted many hours of careful study to matters which have important bearing on various aspects of hospital care and, especially, to matters of concern to the practitioner in his day-to-day relationships with hospitals.

The annual report of the Committee, prepared by its most able chairman, Dr. Leopold M. Trifari, of New Haven, is published in your printed Handbook on Pages 10 and 11. In that general report, you will find an excellent summary of the Committee's activities during the past twelve months and, as you will note, a good many of these have resulted in appropriate actions being taken by the Council.

In keeping with the directive of the House on April 28, 1964, the Council asked the Committee on Hospitals to prepare and file a supplementary report on Hospital Costs and Accounting Procedures. You will recall that, at the last annual meeting, a comprehensive review of the more technical facets of these subjects was presented for your approval. Today you have before you the follow-up report, which has been filed by the Committee and adopted, with commendation, by the Council. The Council recommends that the House take actions on this report as outlined under Item b. of Old Business in your Supplementary Handbook.

House Of Delegates Resolution No. 2

As the specter of state medicine hovers over the providers of health services more ominously in 1965 than at any previous time in America's history, it becomes ever more imperative that all such providers have established principles and policies to guide them. Many astute political commentators are predicting that the enactment of HR 6675—still brazenly referred to as the medicare bill—will mark the beginning of the end for medicine as a private enterprise calling, and, as well, the beginning of the end for voluntary health insurance as we have known it.

It is therefore particularly fortunate that, at this time, Dr. E. Tremain Bradley and the members of his Ad Hoc Committee have completed their study of the matters assigned to them by the House several years ago, and have submitted certain guiding principles and recommendations concerning plans for prepaid medical services which they believe will best meet the needs of the people of Connecticut. It is also significant, I think, that these principles and recommendations are in complete conformance with existing policies of this Society and of the American Medical Association.

You have the report of Dr. Bradley's Committee before you today. The Council has adopted the report, with commendation, and recommends that the House take the actions on it that are listed under Item c. of Old Business in your Supplementary Handbook.

House Of Delegates Resolution On General Practice

An Ad Hoc Committee of the Council, under the chairmanship of Dr. Waldo E. Martin of Milford, has been active in implementing the Resolution on General Practice which was adopted by the House of Delegates on April 28, 1964.

A second progress report has been prepared by the Committee, and the Council recommends that it be accepted by the House as stated under Item d. of Old Business in your Supplementary Handbook. At the time this report was submitted to, and accepted by, the Council, the results of the reported survey of community hospitals throughout the State were not available. It is expected that Dr. Martin will be able to give us those results today, when the House takes up this matter of business.

Final Report: The CSMS Relative Value Study

The Council hopes that it is not being overly optimistic in calling this the *final* report on the Relative Value Study. In 1959, the Society's House of Delegates was in the van in directing the Council to undertake this project of major proportions. For a variety of reasons, too numerous to recount, a succession of delays has held the completion of the Study in abeyance until the present time. So, today—in terms of the national picture—we find ourselves somewhat in the position of bringing up the rear in only now having at hand this important mechanism to help us meet the challenges of modern medical economies.

Many state medical societies have long since adopted Relative Value Schedules, and are using them regularly—along with insurance carriers and others, for various purposes and with apparent benefit. A number of our standing and special committees which deal with third party payment matters have informed the Council that the adoption of such a Schedule by the Society is urgently needed if they are to continue to function effectively. Hence, while the hour may be a bit late, the Council urges the House to adopt a Relative Value Schedule for our state medical organization in accordance with the recommendations presented under Item 3. of Old Business in your Supplementary Handbook.

This Study has cost approximately $15,000 to date—and will cost somewhat more than that to complete. Some may contend that a good deal of this money has been wasted; that we should have adopted the California Schedule in the first place, and eliminated much of the expense and bother of making an original CSMS survey. While, in retrospect, such contentions may have a certain amount of substance to them, it is nonetheless true that the finding that our own results check so closely with the California unit values gives a definite validity to the adoption of an out-of-state Schedule for Connecticut. This would not have been at all possible had we chosen to take a more expedient course.

It seems to me that there exists enough confusion—and even suspicion — among large segments of our membership concerning relative values and their uses, without giving any of them cause to think that we are buying a pig-in-a-poke; that the doings of some of those alleged "radicals" out in California are being arbitrarily imposed on us "conservatives" in the Nutmeg State.

I trust that you have all perused carefully the three component parts of this Report, as submitted to you by the Council, and I believe that Dr. Stewart P. Seigle, Chairman of the Committee on Relative Value Study, plans to be available to answer any questions you may have when this item of business is brought up for action.

Report Of The Nominating Committee

The report of the Nominating Committee (which is the Council) for 1965-66 is published in your Handbook, and I will formally present the slate to you at the proper time at this meeting. However, I would ask you to note several changes in the published report as follows:

Page 38: Dr. George H. Gildersleeve, Norwich, has resigned from this year's Committee on Aging, and does not wish to be nominated for 1965-66.

Page 39: Dr. William B. Rich, Torrington, is leaving the State in July, and has asked that his name be withdrawn as a nominee for service with the Committee on Mental Health. It will be necessary to nominate a replacement for Dr. Rich, since 8 members of the Committee are required.

Reports Of Council-Elected Representatives And Advisors

The published annual reports of the Council-elected representatives and advisors appear in your printed Handbook, mainly on Pages 28 through 34. The others—The Advisory Committee on Medicare and Federal Health Benefits Plans, and The Advisory Committee to the State Commissioners of Welfare, Finance and Control—are printed on Page 16, under the Medical Economics Division.

The Council has reviewed all these reports, accepted them, and presents them to the House as information. On several recommendations that are contained therein, the Council has acted as follows:

1. *The Committee on Emergency Service (Page 33)*: It was voted to endorse the Connecticut Hospital Association's radio communications plan for the State, and to so notify the CHA; and to refer to the Council's Bylaws Subcommittee, for study and report, the suggested designation of the Committee as "The Committee on Disaster Medical Care".

2. *The Advisory Committee to the State Commissioners of Welfare, Finance and Control (Page 16)*: In accepting the annual report of this Committee concerning welfare payment schedules, it was voted to delete the words "of six dollars" in numbered Paragraph 3., and the words "three dollars" in numbered Paragraph 4.

These amendments were made in accordance with the consensus of Council opinion that while it should be permissable to use a Relative Value Schedule *as a guide* to establishing proper time-skill-knowledge relationships between services rendered by physicians, the Society should not, at this time, authorize any of its committees to negotiate payment schedules using *Society-stipulated* dollar conversion factors, whether the third party agency concerned is offered a *Society-approved* Relative Value Schedule or is being guided by one of several already in general use.

Society-Sponsored Insurance Plans

At its meeting of April 14, the Council acted on four recommendations made by the Committee on Medical Economics and Insurance which dealt with various Society-sponsored insurance plans, existing and proposed. I believe that Dr. Francis D. T. Bowen, Chairman of the Medical Economics Divisional Board, is going to present the details of these recommendations to you, as part of his Supplemental Report for the Division. Therefore, to conserve time, I will only appraise you *of the fact* of the Council's actions in this regard.

Conclusion

In conclusion, may I once again express my sincere gratitude for the privilege of serving the Council as its Chairman, and for the honor of being authorized to present this report to the House of Delegates on its behalf. The assignment is indeed instructive, thought-provoking, challenging and—I might add—somewhat more than a little time-consuming as well. I am indebted to all members of the Council for their faithful attendance and dedicated participation in our work, and, particularly, to Dr. Ralph L. Gilman, our President, for his determined leadership and timely advice. And, last but not least, my thanks go to our General Manager and to Mrs. Josephine Lindquist and the staff for their whole-hearted and competent assistance.

Respectfully submitted,
STEVENS J. MARTIN, M.D.
Chairman.

MEMBERSHIP REPORT OF THE SECRETARY

FAIRFIELD COUNTY

Membership—January 1, 1964			907
New Members		37	
Less (Deaths	11		
(Resignations	12		
(Transfers	1		
(Non-payment dues	8		
	32		
Net Gain			5
Membership—December 31, 1964			912

HARTFORD COUNTY

Membership—January 1, 1964			1066
New Members		62	
Less (Deaths	14		
(Resignations	9		
(Transfers	4		
(Non-payment dues	5		
	32		
Net Grain			30
Membership—December 31, 1964			1096

LITCHFIELD COUNTY

Membership—January 1, 1964			142
New Members		0	
Less (Deaths	0		
(Resignations	1		
(Transfers	4		
(Non-payment dues	1		
	6		
Net Loss			6
Membership—December 31, 1964			136

MIDDLESEX COUNTY

Membership—January 1, 1964			122
New Members		4	
Less (Deaths	2		
(Resignations	1		
(Transfers	5		
(Non-payment dues	1		
	9		
Net Loss			5
Membership—December 31, 1964			117

NEW HAVEN COUNTY

Membership—January 1, 1964			952
New Members		61	
Less (Deaths	15		
(Resignations	15		
(Transfers	2		
(Non-payment dues	5		
	37		
Net Gain			24
Membership—December 31, 1964			976

NEW LONDON COUNTY

Membership—January 1, 1964			195
New Members		11	
Less (Deaths	3		
(Resignations	3		
(Transfers	2		
(Non-payment dues	1		
	9		
Net Gain			2
Membership—December 31, 1964			197

TOLLAND COUNTY

Membership—January 1, 1964			22
New Members		4	
Less (Deaths	0		
(Resignations	3		
(Transfers	0		
(Non-payment dues	0		
	3		
Net Gain			1
Membership—December 31, 1964			23

WINDHAM COUNTY

Membership—January 1, 1964			67
New Members		6	
Less (Deaths	0		
(Resignations	1		
(Transfers	0		
(Non-payment dues	0		
	1		
Net Gain			5
Membership—December 31, 1964			72

Associate Members	10	
New Members	0	
Less Deaths	0	
Associate Members	10	December 31, 1964

Total Society Membership—January 1, 1964			3473
New Members			185
			3658
Less: (Deaths	45		
(Resignations	45		
(Transfers	18		
(Non-payment dues	21		129
Total Society Membership—December 31, 1964			3529
Net Gain For Year		56	

TOTALS

Fairfield	912
Hartford	1096
Litchfield	136
Middlesex	117
New Haven	976
New London	197
Tolland	23
Windham	72
	3529
Associate Members	10
	3539

PLACEMENT WANTED

ORTHOPEDIC SURGEON—Board diplomate, 31 years of age, wishes to establish himself in Connecticut in a group or associate practice. Is presently chief resident in University hospital service.

PHYSICIAN trained in Physical Medicine and Rehabilitation, Board eligible, licensed in Connecticut, wishes to practice with either an associate or in an institution.

OPHTHALMOLOGIST—Board certified, Harvard Medical School, university trained, having completed military obligation, now seeks partnership or association with another opthalmologist.

INTERNIST—would like to go into an association or group practice. Connecticut license, Board eligible, will shortly complete military obligation.

GENERAL SURGEON—Board eligible, university trained, 31 years of age. Wishes either group or partnership practice.

INTERNIST—wishes to practice in Connecticut in a group practice or association. University trained, presently in practice, would like to locate in city near a medical center. 36 years of age, military obligations completed.

OBS.-GYN.—Board eligible, 34 years of age, seeks partnership or group practice in southern Connecticut.

OBS.-GYN.—age 36, completing 4 years university residency, July, 1965, military obligation completed, seeks partnership or association with group.

G.P.—Young G.P. with 6 years solo practice plus other experience would like to associate with small group or partnership in suburban community about July 1.

INTERNIST—32 years of age, university trained, completing military service as of July, 1965, wishes partnership or group practice in a large city. Board eligible, good hospital training background.

MAJOR MEDICAL EXPENSE PLAN

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In addition to the above, members up to age 40 may now purchase their Accident and Health protection at a 25% reduction in cost.

Through its continued official sponsorship of our Group Plans, The Connecticut State Medical Society has once again made it possible to offer broadened coverage under these two time-tested policies to members of the Society. If you are not now enrolled, do not turn your back on old friends who have served Connecticut physicians for over a quarter of a century. If a sufficient number of new applications are submitted for the Major Medical Expense Plan, all policies will be issued regardless of past medical history. For full information write or phone.

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Palmer House, Chicago, Illinois — February 6-9, 1965

Harold D. von Glahn, M.D.

This is a dual report on the meetings of the Council on Medical Education of the AMA and The Federation of State Medical Boards of the United States held in Chicago, February 6-9.

The first session of the Federation was devoted to the evaluation of physicians' performance after licensure. A measurement of this is the use of the Professional Activity Study, the so-called medical audit which should not be used for policing the medical staff.

Another study presented measured proficiency and efficiency in such facets as history taking, physical examination, therapy, etc., according to years in practice. This showed a decrease in this area where the physician had been in practice over 12 years, because of poor history taking.

At the University of Utah, a measurement of post-graduate physician performance showed there was *no* relationship between it and medical school and licensing examinations grades. Examination grades do not measure the ability to perform in private practice. A search should be made for a method of testing which would better predict a doctor's future performance.

The afternoon session was devoted to the presentation of a resolution by the Federation to set up an Examination Center and to obtain research foundation money of the sum of $200,000.00 to implement this program. This would consist of a pool of all types of questions, essay and objective, in all specialties tailored to the needs of the various State Boards, and available to the Boards for a fee. It is hoped that it would lead to uniformity of questions of improved quality and possibly further interstate endorsement.

It was emphasized that this would not be a state pool, but it would be revised with the progress of medical knowledge. This was presented later at the annual business meeting of the Federation and passed by a vote of 27 to 5.

* * * * *

The Council on Medical Education devoted the first morning to a detailed history on the background of medical education both in Europe and here. Our medical education system was influenced in many ways by the European trends. We patterned our medical schools after the University of Edinburgh which had the first medical degree conferring medical school. From France, we adopted the idea of a medical school associated with a hospital. The German schools gave us our basic sciences.

The first medical school in this country was established in Philadelphia, which later became the University of Pennsylvania Medical School. A scroll was presented honoring this school's bicentennial by Donovan F. Ward, M.D., present president of the AMA. David Goddard, Ph.D., Provost of the University of Pennsylvania accepted the award and emphasized the importance of having a medical school in a university environment. The feeling that a medical school is better *on* the campus because of a better exchange of ideas between faculties and graduate students in all fields.

Dr. Lyman M. Stowe addressed the Council at this point. He spoke in generalities and arrived at no conclusion.

The next speaker emphasized the importance of a close association between a new medical school and the surrounding community with regard to services, utilities, transportation and the zoning and planning boards.

The next day's morning session was co-sponsored by the National Board of Medical Examiners in recognition of its 50th anniversary. The National Boards are a measurement of the quality of medical care. Even though they are national, there is no federal control and they are not and do not wish to be a licensing board. Over one-half of the medical schools require national board examinations to be taken. In many other medical schools, they are taken voluntarily by the students. Part II is now revised and divided into body systems, rather than specialties. Parts I and II give an evaluation of medical student training, while Part III gives a comparison of internship and resident programs. Changes in Part III utilizing motion pictures and multiple-choice questions have standardized the patient and the examiner.

One speaker brought out the point that even though the medical profession is ahead of other professions in licensure, national control is on the horizon. To avoid this, there must be more standardization and reciprocation among the various states.

Concern was expressed in the relationship to the basic sciences to medical education. It has become fashionable to do research and the teachers involve themselves in research and the medical student suffers. Many times, the student himself is drawn into research rather than encouraged to go into practice. Preclinical and basic sciences must be reorganized in a fashion, so the sudent can project this knowledge into clinical practice.

Respectfully submitted,

HAROLD D. VONGLAHN, M.D.

WOMAN'S AUXILIARY

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ANNUAL MEETING OF THE WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL SOCIETY

The forty-second annual convention of the Woman's Auxiliary to the American Medical Association will be held in New York City, June 20-24, 1965, with headquarters at the Americana Hotel. National committee meetings will be held Saturday and Sunday, June 19 and 20. Registration will start Sunday, June 20, at eleven o'clock and continue through Wednesday, June 23, at 1:00 P.M. in the Regency Ballroom and Foyer, third floor.

Coffee and sweet rolls will be served at registration headquarters each morning before the opening of the general meeting, courtesy of AMPAC and exhibits of Auxiliary activities will be displayed.

On Sunday, June 20, (3 P.M. to 5 P.M.) there will be a Tea and Fashion Show, honoring Mrs. William H. Evans, President, and Mrs. Richard A. Sutter, President-elect, in the Georgian Ballroom, (3rd floor). The Fashion Show, courtesy of Coty, a division of Chas. Pfizer & Co., Inc. will be commentated by Miss Eleanor Lambert, director of the Ten Best Dressed American Women Awards. Tickets at $3.25, including taxes and gratuities may be purchased at the registration desk.

Also on Sunday at 6:15 P.M. there will be a "Get Acquainted Get-Together" for Auxiliary members and guests at the hospitality headquarters, Regency Ballroom, third floor.

A Gala Night Life Party with dinner, three night club shows and transporation at $19.50 (including taxes and gratuities) is available. Advance reservations are necessary—through Gray Line, 460 W. 42nd Street, N.Y.C.—attention Miss Leonore Enken. Please enclose check payable to Gray Line.

At 8:00 P.M. a Medicine and Religion Program, an A.M.A. event, will be held in the Imperial Ballroom of the Americana. It will include a musical program by St. Clare's Hospital Nursing School Choir. Guest speaker will be Dr. Howard Rusk, M.D. of the Institute of Rehabilitation, N.Y.C. and the Rt. Reverend John E. Hines, Presiding Bishop of the Protestant Episcopal Church, N.Y.C. – the topic – "The Related Practice of the Physician and the Clergy."

The official meeting of the Auxiliary will begin at 9:00 A.M. on Monday in the Georgian Ballroom, the Americana. At this time the official rollcall of delegates will be taken, also nominations for the 1966 Nominating Committee will be made. A Guest Day Luncheon will be held at the Trianon Ballroom, of the New York Hilton Hotel, across the street. (Tickets for this can be obtained at the registration desk). The afternoon meeting will include presentations "Cost of Illness—What's That?" "New Frontiers for the Handicapped," "Around the World in 8T Ways," Health Careers, "Mental Health is Everybody's Business." Adjournment 4:30 P.M.

On Tuesday the meeting will again be called to order at 9:00 A.M.—the morning being devoted to State Reports. The Annual Luncheon will be held in the Imperial Ballroom, (second floor), the guest speaker being Dr. Donovan Ward, President of the A.M.A. The meeting will reconvene at 2:30 and will include reports on A.M.A.-E.R.F., Rural Health, The Bulletin, Reports, and presentation of Annual Health Mobilization Award. Voting for the Nominating Comm. will take place from 4:30 to 6:00 P.M. at the Polling Place, Loire 3 and 4 (3rd floor).

On Wednesday the meeting will be held from 9:00 A.M. until 1:00 P.M. At this time the installation of the new officers will take place and results of the nominating committee election will be announced.

On Thursday beginning at 9:00 A.M. a Post-Convention Conference for Presidents and Presidents-elect will be held. This will include the presentation of 1965-66 programs by National Chairmen.

Teen-Age Convention Program

Americana Hotel—Albert Hall (lower level)

On Sunday from 4:00 to 6:00 P.M. a Mixer will be held to which all young people are invited (no reservation necessary). The program for which advance reservations should be made with Gulliver's Trails, 25 Central Park West, N.Y.C. 10023 include a day at the World's Fair and Little Old New York on Monday 8:30 A.M. to 4:30 P.M. and Tuesday. (Youngsters are divided into two groups—pre-teeners 6-12 and teenagers). All inclusive price for both days with lunches is $21.95. Also evening programs are offered on Monday and Wednesday at the World's Fair and in Greenwich Village. On Wednesday from 9:30 to 4:30 an Out-of-Town Day is offered, on Thursday—sightseeing, on Friday—a museum and Coney Island.

There are interesting programs for all age groups. Bring the family and enjoy a week of education, fun, and relaxation!

A New Semi-Synthetic Penicillin

The American Medical Association's Council on Drugs has issued a preliminary report on a new semi-synthetic penicillin, sodium nafcillin.

The drug, described in a March issue of the Journal of the American Medical Association, was reported to be effective in the treatment of staphylococcic infections resistant to an earlier antibiotic, penicillin G. Staphylococci are spheroidal bacteria which live almost everywhere in nature, although not all of them produce disease.

Nafcillin has proved effective in treating infections of the respiratory tract, soft tissues, and skin, the report said. It also has been effective against osteomyelitis (inflammation of the bone) and subacute bacterial endocarditis (inflammation of the inner lining membrane of the heart).

The drug may be given orally, intramuscularly or intravenously. Nafcillin causes more pain and tissue irritation than most other penicillins when given intramuscularly, the report said.

Because nafcillin is a new drug, blood cell studies and kidney and liver function tests should be made during prolonged therapy, the report cautioned. Nothing is yet known about the safety of nafcillin in treating pregnant women; however, the penicillins in general appear to be safe, the report said.

Water No Longer Pure

America's water is no longer pure, and it is being polluted faster than it is being purified, says an editorial in the current Journal of the American Medical Association.

"Not even the rain is pure any longer," the editorial said. "The rains carry down the industrial dusts and smokes and steams; they are now made radioactive in traces; they also carry pesticides. All of these substances eventually get into man's system.

"The consolidated smoke in his (man's) lungs has long been known as anthracosis (darkening by dust of the lungs and lymph glands). His pesticide content is chemically measurable."

"Consideration of water pollution as a single process is obsolete, because even the rain, once man's insurance of purity in his water, now is polluted by the air through which it travels. In turn it pollutes the water of which seas, lakes and rivers are composed."

Man has always polluted water even as he has turned it to his use. He pollutes it with agricultural, industrial and personal wastes, "and he has always polluted it at a greater rate than he has purified it," the editorial said.

"Man has always lived partly in spite of polluted water, and only partly with pure water. He has learned how to remove bacteria with chlorine. But he has not learned how to purify it (water) as fast as he can pollute it.

"When James Simpson constructed the first sand filter in 1829, the intent was to remove visible dirt from the water, to make the water clean. It was 25 years before the sanitary value of clean water was known.

"It took 52 years for the city of London to progress from the General Board of Health's advocation of public ownership of water supplies (1850) to the Metropolitan Water Board of 1902.

"It is easier to contaminate oceans than to move political mountains. Ten years ago, Norway used a slogan cancellation in its post offices, saying, 'Help Keep Our Ocean Clean'.

"Lamentations are as vain as outcries that man is nature's worst enemy; these appeal to lovers of nature, but not to legislatures.

"As the demand for water increases with the population of the world, the big problem is to purify water at a faster rate than that at which it is polluted. Only a slight favorable balance is needed, but the balance has not yet been achieved," the editorial said.

OBITUARY

Louis W. Daley, M.D.

1904 - 1965

The death of Louis W. Daley on March 16, 1965 brought great grief to his many friends, and utter desolation to his wife Amy. He was born in Dunkirk, New York on April 30, 1904 and attended Buffalo, New York schools and Nichols Preparatory School in Buffalo. In 1926 he completed his premedical years at McGill University and four years later he was graduated from McGill University School of Medicine. During the following years of economic depression, he struggled through postgraduate training in otorhinolaryngology, with internship and residencies at many institutions including the Western Pennsylvania Hospital in Pittsburgh, the Columbia-Presbyterian Medical Center in New York, and finally the Manhattan Eye and Ear Hospital, where in 1938 he completed his residency training.

He settled in New Britain in 1938, and soon became a respected leading practitioner of his specialty. He spent long hours in hospital, clinic and office. Daily, for years on end, and with rare interruptions for replenishment of spirit in field and stream, he reached the hospital by 7 a.m., pursued his tireless rounds in operating room, bedside and private office, invariably ending the arduous day no earlier than 7 or 8 p.m. Long hard hours of work, which only a man of his rugged build and easy Irish indefatigability could endure.

In 1938 he was appointed to the staff of the New Britain General Hospital, and thereafter in measured stages, he attained the level of Senior Attending Surgeon until 1964, when in partial retirement he merited the rank of Consultant Surgeon. During these years he served, honorably and well, several interrupted terms as Chief of his Division of Ear, Nose and Throat Surgery. Together with five compatible colleagues he founded the Grove Hill Clinic in New Britain in 1946, and was an active member of that Group until 1964 when he relocated in Old Lyme.

This bare outline of a man's life—he was born, he went to school, he worked, he died—tells little about the man. The special flavor and uniqueness of Louis Daley escape attempts to describe him. He had great zest for life, he had vitality and energy and inner strength which flowed over and into his patients and colleagues. His warmth of spirit, his easy assurance, casual self-confidence and gentle regard for patients and people were reflected in their devotion to him. He was a tower of strength for those in need of his help, a loyal friend, a devoted husband. His death has left a void in those who knew and loved him.

Paul D. Rosahn, m.d.

In Memoriam

Bunnell, Walls W.—Farmington; Yale University School of Medicine, 1929. Dr. Bunnell was codiscover of the Paul-Bunnell test for infectious mononucleosis, for which he was awarded an honorary master of arts degree from Yale University in 1960. The test for the disease is still used throughout the world. He was a member of the American Medical Association, the Connecticut State Medical Society, the Hartford County Medical Association, and the American College of Physicians. He was past president of the Connecticut Horticultural Society and in 1957-58 won the top award of the Farmington Garden Club, the Gold Seal Award for Civic Improvement, for the Brickwalk Shops on Farmington Avenue, a miniature colonial village. He was a breeder of prizewinning poultry and had won at the Eastern States Exposition and at the Hartford County Poultry Association annual shows. In 1956 the Farmington Historical Society cited him for his interest in preserving Farmington's landmarks. Dr. Bunnell died April 8, at the age of 63.

Deming, Edward A.—West Hartford; Johns Hopkins Medical School, 1908. Dr. Deming was in general practice in the Hartford area for 37 years. He was on the consulting staff of Hartford Hospital. Dr. Deming was a member of the Hartford City and County Medical Associations, the Connecticut State Medical Society, and the American Medical Association. He was president of the Hartford City Medical Association in 1936 and president of the Hartford County Medical Association in 1945. He was a member of the board of directors of Hillyer College. Dr. Deming died March 28, at the age of 75.

Goldstein, Theodore—West Hartford; Yale University School of Medicine, 1947. Dr. Goldstein was a psychiatrist for the West Hartford School district for twelve years. He was an Army Veteran of World War II. He did postgraduate work at the New Haven Psychiatric Service under a Commonwealth Fellowship. He was a member of the American Medical Association, the Connecticut State Medical Society, and the Hartford County Medical Association. Dr. Goldstein died April 7, at the age of 42.

Koster, Leo W.—New Haven; New York University School of Medicine, 1937. Dr. Koster was a noted dermatologist in the New Haven area. During World War II, Dr. Koster served with the U. S. Public Health Service and was discharged in 1945 with the rank of Lieutenant Commander. Dr. Koster was a member of the American Medical Association, the Connecticut State Medical Society, and the New Haven County Medical Association. Dr. Koster died April 7, at the age of 55.

Quinn, John F.—Bridgeport; University of Maryland, 1906. Dr. Quinn was an optometrist and practiced in the Bridgeport area for over 50 years. Dr. Quinn was one of the first doctors to intern at St. Vincent's Hospital, in Bridgeport, and was associated with the Hospital for 51 years, where he was formerly on the executive board for many years. Dr. Quinn was a member of the American Medical Association, the Connecticut State Medical Society, and the Fairfield County Medical Association. Dr. Quinn died April 10, at the age of 86.

1965 MEETINGS

June 9—Annual Meeting of the Connecticut Society of American Board Internists to be held at site to be selected

September 24—40th Clinical Congress to be held in Mary S. Harkness Auditorium at the Yale University School of Medicine, New Haven. The Program will be devoted to "Advances in the Treatment of Infection" and "Advances in the Treatment of Shock."

Doctor's Office

Thomas M. Feeney, M.D., announces the removal of his office to 60 Gillett Street, Hartford.

Nicholas G. Georgakis, M.D., announces the opening of an office for the practice of allergy at 230 Danbury Road, Norwalk.

Goiter Still Excessive

There still is an excessive amount of goiter (a swelling of the thyroid gland), despite preventive measures which have been known for 40 years, says a report in the current Journal of the American Medical Association.

A survey of 8,641 persons in the community of Tecumseh, in southern Michigan, revealed thyroid enlargement in 451 females (10.2 per cent of those surveyed and 124 males (2.9 per cent).

"Goiter persists at an excessive frequency, especially among women over age 19 (16 per cent)," the Journal article said.

The report was prepared by Josep Matovinovic, M.D., Norman S. Hayner, M.D., Frederick H. Epstein, M.D., and Marcus O. Kjelsberg, M.D., of the Medical School and the School of Public Health, University of Michigan, Ann Arbor

Adding a small amount of iodine to the water or food supply has been found to be an effective goiter preventive. Iodized salt frequently is used.

"In Tecumseh, only 62 per cent of salt purchased for human consumption during one winter month was iodized, a level considerably below the reasonable goal of permanent and general goiter prophylaxis," the report said.

This doesn't mean 62 per cent of the people consumed iodized salt, the report said. Most probably consumed a mixture if iodized and non-iodized varieties. This was a level of iodine consumption too low for adequate goiter prevention, the report said.

In 1924, the Michigan Department of Health published a survey which showed that prevalence of goiter was very high in Michigan and varied inversely with the iodine content of the drinking water. A goiter-prevention program was started soon afterward, emphasizing the use of iodized salt.

The survey also suggested that iodine deficiency can have an adverse effect on mental development, as the average scholastic standing of goitrous children was lower than that of children with normal thyroid glands.

AROUND THE STATE

Medical Reserve Opportunity

Any physician of Medical Reserve component has excellent opportunity to build up retirement credit with pay for fifteen days active duty at Niantic, Connecticut. Periods from July 3 to July 17: July 17 to July 31: and July 31 to August 14. If interested, contact Col. Joseph J. Bruno, Surgeon General, State of Connecticut. Write to 1266 Forest Road, New Haven, Connecticut. Tel. 387-5589 or 933-2561.

New Haven County

The 181st Annual Meeting
New Haven County Medical Association
March 18, 1965

A most interesting and well attended meeting of our Association was called to order at 3:45 P.M. by Jack Galen, President, on Thursday, March 18, 1965.

Officers of the Connecticut State Medical Society, led by their President, Dr. Ralph L. Gilman, and Dr. Franklin M. Foote, Commissioner of Health for the State of Connecticut, were our honored guests. Past Presidents of our county association were introduced from the audience. Dr. Edward A. Palomba, representing Tolland County, brought greetings and was made welcome.

The agenda called for the election of officers, committee members, delegates and alternate delegates, and a slate of candidates for membership.

By-Law revisions under study by Dr. Henry Caplan and his committee, were again read and accepted with a few minor changes.

An amendment intended to fix attendance requirements for the annual and semi-annual meetings was returned to the table.

The Ad Hoc Committee to increase attendance at these meetings provided a number of door prizes. With characteristic New Haven County hospitality our guests shared largely among the lucky recipients of potables and other useful and valuable gifts.

The New Haven County Hospital Association held its annual meeting at the close of our business meeting, re-electing present members of the Board of Directors and adding some new ones.

A Social Hour and Dinner followed at which we were honored by the presence of Dean and Mrs. George A. Garratt of the Yale University School of Forestry, and the wives of our members. The Ad Hoc Committee gallantly remembered each of the ladies with a tasteful posey.

During the dinner recently elected members were presented by our newly elect President, Dr. Luca E. Celentano. Dr. J. H. Green presented the Past-President's plaque to Dr. Jack Galen, who responded with well-chosen remarks.

Dr. Stewart Petrie introduced Dean Garratt as the speaker of the evening. His presentation entitled "Therapy of the Outdoors" pointed up the many facilities by our State Forestry and Park Commissioner for outdoor recreation and the leisure moments of the citizens of Connecticut.

Thus a very interesting meeting, dinner and talk rounded out the afternoon and evening of our 181st Annual assembly.

Respectfully submitted,
H. A. Levin, m.d., *Clerk.*

News From The Connecticut State Department Of Health

Measles cases reported from Connecticut localities moved up to 530 from 485 during the week ending April 10, said Franklin M. Foote, M.D., Commissioner, Connecticut State Department of Health. Parents of children over 12 months old who have not gained immunity through having measles or thru vaccination should be aware of the protection afforded by the measles vaccines. The family physician or local health department can explain the steps that can be taken.

Streptococcal cases almost reached a thousand, with 985 reported, up from 892 the week before. Scarlet fever cases came to 36 compared with 31.

Hookworm infection was discovered in 10 Connecticut residents, against 7 the previous week. There were 249 cases of this parasite found in 1963, and 252 in 1964. The individuals found suffering from this disorder are known to have been exposed to hookworm in various warm climate areas. Possible spread of hookworm in Connecticut to uninfected people is not a problem due to climate and sanitation measures that prevail here, said Dr. Foote.

Chickenpox cases climbed to 345, up from 275, while German measles held about the same at 78, as against 86. Mumps was up slightly to 105 from 99.

Yale-New Haven Hospital

A revised affiliation between Grace-New Haven Hospital and the Yale University School of Medicine, which strengthens their association as a modern medical center, was announced recently by Charles H. Costello, president of the Hospital, and Kingman Brewster, Jr., president of Yale.

The initial step in implementing the affiliation will be a change in the name of the Hospital to "Yale-New Haven Hospital." The various components of the Hospital, however, are expected to be given distinctive appropriate designations at a later date.

The new name will "more appropriately identify the Hospital as a university teaching hospital," which it has been since its foundation in 1826, they said.

This new agreement is the latest in a series of steps in the past decade leading toward closer partnership. In 1958 the affiliated units of the Hospital and the Medical School were incorporated as the Yale-New Haven Medical Center, which will continue to function as a corporate body to receive gifts and grants.

The new affiliation, approved by the Hospital's board of directors and the Yale Corporation, will "improve the patient and community services provided by the Medical Center," and create an "optimum environment for the teaching and research programs of medicine at Yale," according to the announcement.

The Hospital and Yale will continue as separate corporations, each in control of its respective properties and affairs. However, Yale, under the new agreement, will have a minority representation on the Hospital's board of directors. The Hospital board will otherwise continue to be made up of community civic, business and industrial leaders.

To be responsible for the unified operation, a new eight-man joint board will be established with equal representation, and this board, in turn, will appoint a joint administrative committee.

The Yale School of Medicine will continue to be directed by its Dean, Dr. Vernon W. Lippard, and the Hospital by its Executive Director, Dr. Albert W. Snoke.

Disclosing details of the revised agreement, the spokesmen said the new agreement "is a demonstration of the willingness of our combined organizations to utilize effectively our vast medical resources, known throughout the world and regarded as one of New Haven's and Connecticut's greatest assets."

A closer affiliation between the two corporations, under consideration for many months, was prompted by the fact that the resources of the Hospital in physical facilities, personnel and finance are limited, and the quantity of patient care, teaching, research and community service which the hospital can provide is, therefore, also limited.

Noting that a long-range development program is planned by the Medical Center, it was pointed out that funds for these projects must come from national as well as local sources, by that large contributions, particularly from foundations, generally are made to university teaching hospitals and medical centers rather than to community hospitals.

The closer partnership will assist the university in "seeking financing of buildings which may be desirable" to realize the Yale-New Haven Medical Center's full potentialities.

The new agreement is designed to organize the Yale-New Haven Medical Center like the Columbia-Presbyterian Medical Center and New York Hospital-Cornell University in New York City.

Yale-New Haven Hospital's medical staff, as in the past, will include physicians who practice in the community as well as full-time faculty of the Medical School. This medical staff will be composed primarily of an active staff of full-time and part-time members of the Medical School faculty, and additional selected physicians in the community.

In the only organizational modification, the Hospital's medical staff will be unified under a single set of by-laws with single chiefs on all clinical services. Associate Chiefs of the clinical services of Medicine, Surgery, Obstetrics and Gynecology, and Pediatrics are to be selected from the part-time academic faculty.

The Associate Chiefs, who are community physicians with medical school faculty appointments, will be responsible for the supervision, administration and quality of medical care provided all patients on designated private divisions of the Hospital.

The revised affiliation agreement sets careful limitations on future appointments to the Hospital's medical staff. New appointees will have to meet a "high standard of education, training and experience" which would enable them "to care for patients in the exemplary manner dictated by the needs of an institution where young physicians are in training." The privileges of staff members in admission of their private patients to the Hospital remain unchanged.

Recognizing the important role of the general practitioner in providing medical care to the community, the status of these "family physicians" will be maintained and they will remain an integral part of the medical staff.

The affiliation agreement stresses Yale's recognition of the Hospital's need to be financially secure. Besides paying for the expenses that are clearly identified with teaching and research, Yale will "lend all appropriate assistance to the Hospital in its dealing with the community and with third parties in order to secure adequate reimbursement for services rendered."

As a general principle, "the Hospital will assume financial responsibility for the expense of patient care and the Medical School for expenses of teaching and research." The Hospital will retain responsibility "to classify and restrict the numbers of patients admitted or treated in clinics as its financial circumstances may require. . . . Yale does not pay, and should not be expected to pay from educational funds, for the hospital care of patients who represent a community responsibility."

Presidents Costello and Brewster, summarizing the purposes of the newly strengthened agreement, said: "We are determined to keep the Yale-New Haven Medical Center in the forefront in medical care, research and education. The partnership of Yale, the Hospital and the community physicians has contributed to the Medical Center's international reputation, and the new agreement now provides the framework needed to meet the heavy medical responsibilities facing us."

The Hospital, chartered in 1826 by five doctors on the Yale faculty, was the first in Connecticut and the fifth oldest in the country. The Medical School, opened in 1813, is the sixth oldest in the United States Both institutions have been closely associated with each other since their founding.

The original New Haven and Grace Hospitals, the latter instituted in 1892, both contemplated building programs in 1945. The two hospitals, instead, consolidated facilities and staff that year under the corporate title of The Grace-New Haven Community Hospital. The Memorial Unit, financed largely by public subscriptions, was opened early in 1953. Facilities at the Medical Center, in a state of constant expansion to keep pace with medical progress, have grown at an even more remarkable pace in the last decade.

The Medical School's Edward S. Harkness Memorial Residence Hall was openend in 1955. The Hunter Radiation Therapy Center, opened in October, 1958, in less than seven years has undergone numerous changes and today ranks as one of the nation's foremost centers for treatment of cancer. In use here is a 6 to 8-million-electron-volt linear accelerator, one of the first five installations established in the United States.

Also in 1958, a large addition to the Sterling Hall of Medicine expanded facilities for research and instruction in anatomy and biochemistry. Three years later the Charles A. Dana Operating Pavilion was opened. Included in this new facility are ten of the most modern operating rooms for general and specialized surgery, such as open-heart and neurosurgery, and a 17-bed recovery room.

To meet the increased needs of the community, the unfinished eighth floor of the Memorial Unit was completed in the Spring of 1962, adding fifty-three medical and surgical beds, and a 16-bed intensive care unit. The Charles A. Dana Clinic and Hospital Diagnostic and Service Building, a joint venture of the Hospital and Medical School, was opened last December. The Medical School's Laboratory of Epidemiology and Public Health will be dedicated in April. Currently under construction is the Laboratory of Clinical Investigation.

Since 1962 more than $15 million in new construction has been completed or is still underway at the Medical Center. In addition to the Yale and Hospital buildings previously mentioned, the Connecticut State Mental Health Center and a 3-story addition to the Hunter Building also are under construction. Other new construction costing $3,500,000 will be started before the end of 1965.

The whole complex of the Yale-New Haven Medical Center embraces far more than just the School of Medicine and the Hospital. It also includes the Yale Psychiatric Institute, the Yale Child Study Center, four nursing schools (Yale, Grace-New Haven, the University of Connecticut, the Licensed Practical Nurse Program.)

New Haven is generally considered one of the half-dozen leading centers for medical education and research in the United States, and one of perhaps a dozen in the world.

Located in the Hospital and supervised by Yale physicians are two clinical research centers, one for adults and one for children. Financed by the federal government through the National Institutes of Health, the centers admit patients with unusual or undiagnosed medical problems for evaluation, study and treatment.

Many pioneering developments in medicine have been recorded at the Yale-New Haven Medical Center. These include: first use of penicillin on a human patient in North America; first hospital in the United States to establish a maternity rooming-in unit; "prepared childbirth" program pioneered in the United States. Grace-New Haven was among the first hospitals where successful open-heart surgery was performed. Intensive programs of research and care of newborn infants are among the many studies currently underway at the Medical Center.

"Yale-New Haven Hospital" traces its beginning to May 28, 1826, when the General Hospital Society was officially chartered in Connecticut. Since the opening of the first building in 1833 with 75 beds, the hospital has never closed its doors.

From 1862 to 1865 the Hospital buildings and grounds were used by the government for a military hospital where 25,340 Civil War soldiers were treated.

The first extensive expansion and reconstruction at the Hospital took place in the 1920's and 1930's. The Tomkins and Fitkin wings, constructed along relatively modern lines in the early 1930's, were made possible through an appeal for funds for these facilities by the late Yale Medical School Dean Milton Winternitz to many Yale alumni outside of Connecticut.

The Hospital today has 735 beds and 94 bassinets. It provides short-term treatment of patients of all types under the broadest possible spectrum of diagnostic and therapeutic services.

The Hospital employs more than 2,350 full-time and part-time personnel. Medical School personnel number 680 non-faculty people, and 946 full-time and part-time faculty. Nearly 1,000 students are enrolled in 13 educational programs at the Medical Center. The medical staff numbers 1,037 physicians, including 227 intern and resident physicians.

More than 900,000 patients have been admitted to the Hospital since it was opened. Since 1872 the outpatient department has recorded in excess of 4,300,000 visits to the Hospital's 67 clinics. Last year 29,555 patients were admitted, and visits to outpatient clinics and the emergency service totaled 156,787. In the same 12 months, 4,844 babies were born at the Hospital.

Yale-New Haven Hospital, as the fifth largest employer in New Haven, represents an important economic resource to the community. Wages and salaries of employees account for 65 per cent—$10 million of the Hospital's annual budget.

News From Yale University School Of Medicine

"Nowhere do most existing medical care systems demonstrate their shortcomings more clearly than in the handling of mentally ill," Dr. Karl Evang, Director-General of Health Services of Norway, said at dedication ceremonies formally opening Yale's new $4,200,000 Laboratory of Epidemiology and Public Health recently.

Dr. Evang, who delivered the C.-E. A. Winslow Lecture on "Current Medical Care Problems", said a solution to the mentally ill problem requires a halt to "lack of scientific insight, traditionalism, vested interests, outmoded legislation, lack of proper institutions and personnel", and "the deeply rooted unwillingness even in the medical profession to know oneself."

Other speakers on the program were Kingman Brewster, Jr., President of Yale; Dr. Vernon W. Lippard, Dean of the School of Medicine; J. George Harrar, President of the Rockefeller Foundation; and Dr. Anthony Monck-Mason Payne, Professor of Epidemiology and Public Health and Chairman of the Department.

Included in the new building are headquarters of the Rockefeller Foundation Virus Laboratories which moved from New York City this winter, and the World Health Organization's International Reference Center for Arboviruses.

These are selected paragraphs on key points in the lecture of Dr. Evang:

Medical care programs as we meet them today often carry limitations created by the past.

At the time during the last part of the 19th and the first decades of the 20th Century where a number of countries in Western Europe introduced their medical care programs, neither preventive medicine nor rehabilitation, nor the understanding of the patient as an integral part of his family and society had gained foothold. The basic importance of psychological factors in health was not understood, neither was the relationship between "health and wealth", between the working capacity of a population and the economic growth of a country.

* * *

We have to admit that no country in the world has so far succeeded in establishing adequate medical care services in the sense that every citizen has a fair chance to get optimal diagnosis, treatment, prognosis and aftercare.

* * *

Due to the ever-increasing cost of medical care, we can safely predict that the tremendous amount of money spent will continue to grow.

* * *

If a given country will secure a progressive development of its medical care services, it must therefore find a way not only to pay the ever-increasing *running* costs, but also for having available at any given moment capital for *investment* in new instituions, personnel and equipment.

* * *

If one goes through the history of medical care services, one will in most countries not find an organic, orderly development, but long periods of stagnation followed by periods where a great deal of advance has been achieved over a short span of time.

* * *

Another set of problems arrives out of the way in which running expenses of medical care are being paid. We have organized in many countries the "paying end" of medical care, whilst we do not have corresponding control over the service end.

* * *

Medical care is habit-forming. Persons get easily addicted to medical care, because they never get satisfied. Here we approach one of the greatest controversies in medical care today: The relationship between *need* for medical care and *demand*.

* * *

One of the greatest practical problems in medical care in most parts of the world today is the unequal distribution of doctors.

For many years it was taboo to discuss the problems of the general practitioner. This still holds true for some countries where the medical profession immediately gets so emotional that a rational approach and a detached discussion is made impossible.

* * *

The plight of the general practitioner throws light on a much wider problem fundamental to our topic for today, *the specialization of medicine*.

* * *

A striking feature, even of some of the best organized systems for medical care of a total population today, is that the prepaid program only covers curable medicine in the stricter sense.

A reaction against this limited approach also started in the U.S.A. where excellent schools of public health were developed. This was a conscious attempt to widen the scope of health services beyond that of medical care. Winslow (Professor Charles-Edward A. Winslow, who founded the Yale Department of Public Health in 1915 and served as its chairman for 30 years) was one of the fathers of this philosophy.

In countries where the dichotomy between medical care on one side and other branches of medical services on the other is most pronounced, there is difficulty in recruiting people not only to general practice but also to public health services.

* * *

We all agree, I think, that the ideal society would be one in which no drugs existed because we had no use for them, but obviously this is a long, very long, way ahead. In the meantime, the pendulum has swung to the other extreme: We welcome with therapeutic enthusiasm the ever-increasing variety of drugs.

* * *

Nowhere do most existing medical care systems demonstrate their shortcomings more clearly than in the handling of mentally ill. To overcome this situation we do not only have to overcome lack of scientific insight, traditionalism, vested interests, outmoded legislation, lack of proper instituions and personnel; we are also faced with the deeply rooted unwillingness even in the medical profession to know oneself.

* * *

On an increasing scale we must now apply the same scientific methods which have been used with such success in basic research, also in the various fields of medical activity, including medical care.

Two staff members of the Rockefeller Foundation Virus Laboratories and a specialist in medicine and public health have been named full professors in the Yale School of Medicine, effective July 1, 1965.

The announcement by Charles H. Taylor, Jr., Provost of Yale, listed them as:

Dr. Edwin Richard Weinerman, promoted to Professor of Public Health and Medicine (Medical Care).

Dr. Jordi Casals, appointed Professor of Epidemiology.

Dr. Loring Whitman, appointed Professor of Epidemiology.

Dr. Casals and Dr. Whitman, both eminent in the field of arthropod-borne viruses, are here in connection with the transfer of the Rockefeller Foundation Virus Laboratories from New York City. The Rockefeller Laboratories will occupy three floors of the new nine-story Epidemiology and Public Health Laboratory which was dedicated Saturday, April 10.

Both Dr. Casals and Dr. Whitman will retain their present positions with the Rockefeller Foundation Virus Laboratories which will continue to operate as a separate and independent unit at Yale. The Rockefeller scientists, however, will hold appointments to the Yale medical faculty as well.

Dr. Casals

Dr. Casals, a native of Viladrau, Spain, was born May 15, 1911. He holds a B.S. degree from the Instituto Nacional de Segunda Ensenanza in Barcelona and earned his M.D. degree from the University of Barcelona in 1936.

He served as an Interne in Surgery at the University of Barcelona from 1934 to 1936, at which time he became a Visiting Investigator at the Rockefeller Institute. He was an assistant at Cornell University from 1936 to 1938, and served as an Assistant and Associate at the Rockefeller Institute for Medical Research from 1938 to 1952. He has been a staff member of the Rockefeller Foundation since 1952.

Described by colleagues as "one of the most eminent men in the field of virological serology", Dr. Casals has many articles and several books to his credit, particularly on arthropod-borne viruses.

Dr. Whitman

Dr. Whitman, a native of New York City, was born February 15, 1904. He received his A.B. degree from Harvard in 1925 and his M.D. from Harvard's School of Medicine in 1930.

He was a Volunteer Assistant in the Institute of Hygiene at Basel, Switzerland in 1930-1931, and as Instructor at Harvard's Department of Bacteriology in 1931-1932. He has been a Rockefeller Institute staff member since then.

An entomologist as well as an epidemiologist, his 32 years of scientific effort include six years of work in Brazil and three as a U.S. Army Medical Corps officer. He has written at great length on yellow fever and jungle fever, as well as on viruses found in farflung corners of the world.

Dr. Weinerman

Dr. Weinerman, a native of Hartford, Conn., was born July 17, 1917. He received his A.B. degree from Yale in 1938, his M.D. from Georgetown University School of Medicine in 1942 and a Master of Public Health degree from Harvard School of Public Health in 1948.

He was appointed an Associate Professor of Medicine and Public Health (Medical Care) at Yale School of Medicine in 1962.

He is Director of Ambulatory Services, involving all outpatients at the Grace-New Haven Medical Center. In this position he has strengthened the whole clinical program of the center, regarding it as a means of maintaining better standards of community health.

Dr. Weinerman recently flew to Selma, Alabama, to serve as a consultant in public health and sanitation problems arising on the five-day civil rights march to Montgomery.

Last December he was elected president of Delta Omega, the honorary public health society which was established in 1924 to recognize and encourage scholarship in public health and to honor those who have attained prominence in the field.

He was a National Foundation for Infantile Paralysis Fellow at the Harvard School of Public Health, after which he served as Visiting Associate Professor of Medical Economics and Head of the Division of Medical Care Administration at University of California School of Public Health.

Dr. Beeson

Dr. Paul B. Beeson, Ensign Professor of Medicine and Chairman of the Department of Internal Medicine at the Yale School of Medicine, has been appointed Nuffield Professor of Clinical Medicine at Oxford University.

Dr. Beeson will resign from the Yale faculty to accept his Oxford appointment, effective October 1, 1965. He will also be a Fellow of Magdalen College at Oxford.

A noted specialist in the field of infectious diseases, Dr. Beeson was named to his present positions at Yale in 1952. Under his chairmanship, the teaching and research program of the department has had one of the largest expansions of any at Yale. The faculty has increased three-fold in the past decade, the research facilities including new laboratory buildings have increased five-fold, and the annual budget for the Department of Internal Medicine is now over $2.5 million.

A significant part of the growth of the Department has been the development of many key subsections involving the specialities in hematology, neurology, dermatology, medical genetics, immunology, and others.

Dr. Kemp Heads Psychiatry Unit

At a dinner meeting on April seventh, at the Hall-Brooke Hospital in Westport, of the Fairfield-Litchfield chapter of the Connecticut District Branch of the American Psychiatric Association Dr. Walter W. Kemp of Stamford took over the presidency of the organization from Dr. Leo H. Berman of Westport.

Other officers elected at the meeting were: Dr. Elwyn M. Smolen of Bridgeport, director of the Bridgeport Child Guidance Center, president-elect; Dr. Albert M. Miss of Fairfield, secretary; Dr. Faith N. Ogden of New Canaan, treasurer; and counselors Dr. Warren Mann of Greenwich, Dr. Paul E. Kaunits of Westport and Dr. Richmond C. Hubbard of Danbury.

The agenda included a discussion by association members of a psychiatric case, with a young adolescent as the subject, in which all staff personnel worked with the patient.

"The organization," Dr. Berman said, "is in its first year; we are anxious to become more involved in community activities. That is our purpose."

Statement On Intrauterine Contraceptives

The use of plastic intrauterine contraceptive devices (IUCD) is "generally recognized as an inexpensive and effective method of birth control," said a statement adopted by the American Medical Association's Committee on Maternal and Child Care.

The Committee commented that, "The increasing demand by the public for a simple, inexpensive and effective method for birth control requires that medicine accept a major responsibility in this area," and that, "in discharging this responsibility, the physician must be prepared to provide services and counsel according to the needs of his patients and at a reasonable cost."

It said it would not recommend specific charges for insertion and supervision because such matters are best determined at the local level. However, it noted that, "Since the initial cost of insertion instruments and IUCD coils is relatively small and the medical procedure is comparatively simple . . . the charges should be commensurate with the relative simplicity of this service."

Loan Program For Medical Students

One of every six American medical students, interns and residents is being assisted by a loan-guarantee program started three years ago by the American Medical Association.

More than 19,000 loans totaling more than $27,600,000 have been guaranteed under the program by the AMA's Education and Research Foundation through a cooperative program with three banks.

Medical students may borrow up to $10,000 over seven years, with up to 10 years to repay. They may borrow $400 to $1,500 annually.

The Foundation has raised $2,472,000 as a guarantee fund for the loans. Each dollar guarantees $12.50 in bank loans, thus providing a credit potential of more than $30 million.

Loans are being made at the rate of 600 a month. Over 90 per cent of the total loan potential and accruable interest had been committed by the end of 1964.

Contributions still are needed to keep the program on sound financial footing, said Foundation President Raymond M. McKeon, M.D., of Coos Bay, Ore.

It's expected the program will be self-sustaining in four to five years, he said. New Loans then will be offset by repayments. Borrowers already have repaid 384 loans, and are repaying another 2,167.

New National Headquarters For The Arthritis Foundation

The Arthritis Foundation—now the sole voluntary health agency serving the nation's more than 12,000,000 arthritis sufferers—will occupy new national offices designed to accommodate expanded programs for research and patient care in arthritis and the rheumatic diseases.

The new headquarters for arthritis in the United States now is located at 1212 Avenue of the Americas, New York, N.Y. 10036. It includes offices of the American Rheumatism Association, the professional organization of physicians and scientists in the rheumatic disease field.

Arthritis Foundation president Dr. William S. Clark described the move as an important step following the recent reorganization of the health agency to meet more forcefully the tremendous challenge of crippling arthritis on all fronts.

During 1965, Dr. Clark noted, the Foundation and its 78 chapters throughout the counrty will be working for a doubled campaign goal of $10,000,000 for support of the search for the cause and cure of arthritis and for improved treatment for the arthritis patient.

The AF's national program includes support of arthritis research centers, professional research and training, patient care and rehabilitation services, and a broad program of public education on the disease.

(Directly serving the New York metropolitan area is the AF's New York Chapter, located at 432 Park Avenue South.)

Greatest Good For The Greatest Number

Each drug, new or old must be examined in the light of the statistical probabilities of its capacity for effective treatment and its capacity for toxicity. The problems are enormous. Should aspirin, producing a 60 to 70 per cent incidence of gastrointestinal hemorrhages and an estimated 500 deaths per year but saving no lives, be permitted? Should a drug responsible for saving 150,000 lives per year and simultaneously responsible for 500 deaths be permitted? There can be no general rules; each situation is a problem to be examined in and of itself; decisions must be made upon a basis of scientific humanism: scientific in the sense that the morality and ethics of impact (the greatest good for the greatest number) is the motivation.—Gustav J. Martin, Sc.D., in *Experimental Medicine and Surgery,* 22: 2-3, (June-Sept.) 1964.

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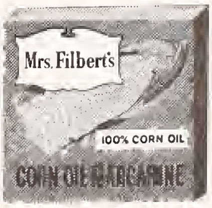

* AMA Council on Foods and Nutrition: The Regulation of Dietary Fat, *JAMA* 181:411-423 (August 4, 1962).
AMA Council on Foods and Nutrition: Composition of Certain Margarines, *JAMA* 179:719 (March 3, 1962).

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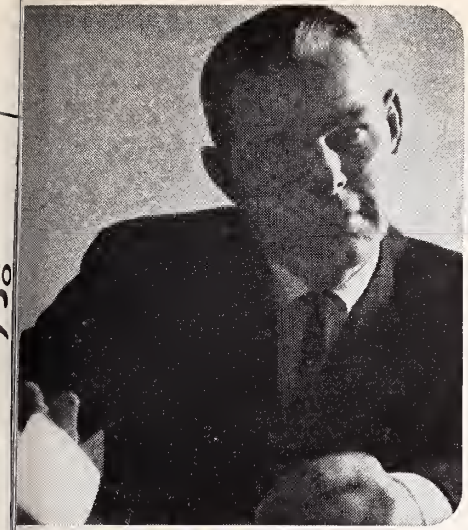

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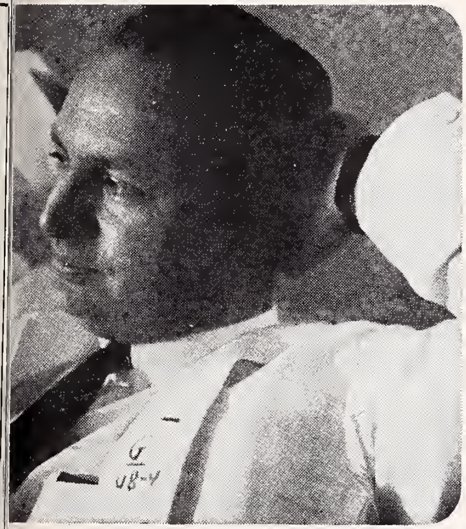

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*Chupkovich, V.; Finnerty, F. A., Jr., and Kakaviatos, N.: The value of chlorthalidone plus reserpine in moderately severe and severe hypertension: A two year study. Presented at the 7th Inter-American Congress of Cardiology, Montreal, June 14–19, 1964.

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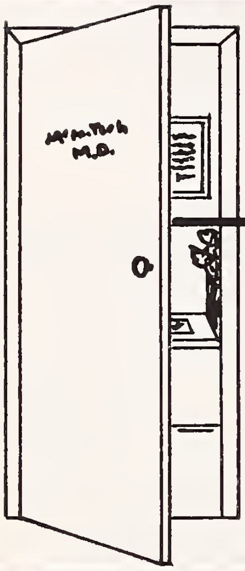

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Note: Registration forms and requests for information are to be directed to: Edward C. Rosenow, Jr., M.D., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pa., 19104.

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COURSE IN POSTGRADUATE GASTROENTEROLOGY

October 28, 29, 30, 1965

The Annual Course in Postgraduate Gastroenterology of the American College of Gastroenterology will be given at the Americana Hotel in Bal Harbour, Fla., 28, 29, 30 October 1965.

The Moderators for the Course will again be Dr. I. Snapper, Director of Medical Education, Brookdale Hospital Center, Brooklyn, N.Y. and Dr. John L. Madden, Clinical Professor of Surgery, New York Medical College and Director of Surgery, St. Clare's Hospital, New York, N.Y.

The faculty for the Course will be drawn from the Medical Schools in and around Florida. The subject matter to be covered, from the medical as well as the surgical viewpoint, will be essentially, the diagnosis and treatment of gastrointestinal diseases and comprehensive discussions of diseases of the esophagus, stomach, pancreas, spleen, liver and gallbladder, colon and rectum. A clinical session will be held at the Mt. Sinai Hospital in addition to the several individual papers to be presented.

For further information and enrollment, write to the American College of Gastroenterology, 33 West 60th Street, New York, N.Y. 10023.

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Letter To The Editor

The Need For Vigilance

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BOOKS RECEIVED

Books received for review are acknowledged in this department and such acknowledgement must be regarded as a sufficient return for the courtesy of the sender. Selection will be made for review in the interests of our readers and as space permits.

The Evaluation of Therapeutic Agents and Cosmetics. Editors: Thomas H. Sternberg, M.D. and Victor D. Newcomer, M.D. Co-Editors: Charles D. Calnan, M.R.C.P., Adolf Rostenberg, Jr., M.D., and Stephen Rothman, M.D., The Blakiston Division, McGraw-Hill Book Company, New York, June 1964, 293 pp., Illustrated. $17.50.

English Medical Humanists. Logan Clendening Lectures on the History and Philosophy of Medicine, Twelfth Series, by C. D. O'Malley, The University of Kansas Press, Lawrence, Kansas, 1965, 52 pp. $2.00.

Congenital Malformations. Papers and Discussions Presented at the Second International Confernece on Congenital Malformations, New York City, July 14-19, 1963. Compiled and Edited by The International Medical Congress, Ltd., New York, 442 pps., Illustrated. Price not specified.

Preventive Medicine. Second Edition. Principles of Prevention in the Occurence and Progression of Disease. Edited by Herman E. Hilleboe, M.D. and Granville W. Larimore, M.D., W. B. Saunders and Co., Philadelphia and London, 1965, 523 pp., illustrated. $12.00.

Cellular Biology Of Myxovirus Infections. Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme, O.B.E., M.A., M.B., F.R.C.P. and Julie Knight, B.A., Little, Brown and Company, Boston, 1964, 368 pp., with 85 illustrations. $12.00.

Trauma To The Liver. Volume III in the Series Major Problems in Clinical Surgery, J. Englebert Dunphy, M.D., Consulting Editor. Authors: Gordon F. Madding, M.D. and Paul A. Kennedy, M.D., W. B. Saunders Company, Philadelphia and London, 1965, 135 pp., Illustrated. $6.00.

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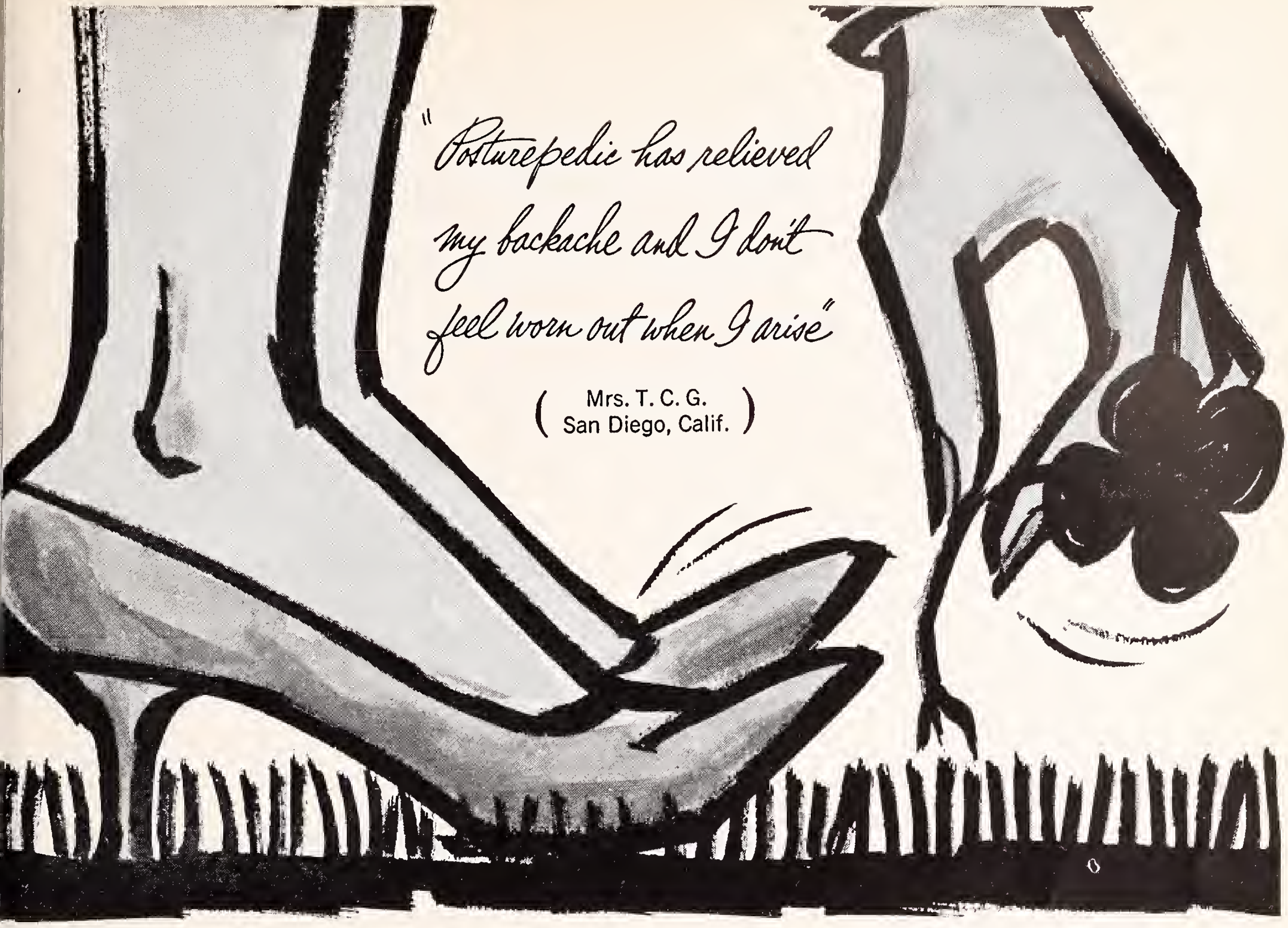
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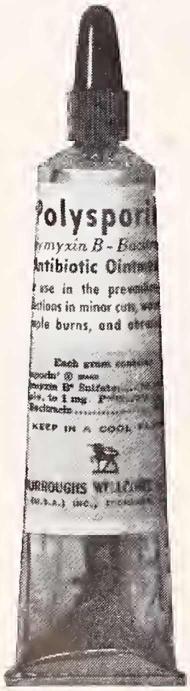

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NEW BOOKS IN REVIEW

THE MASK OF SANITY. *Fourth Edition. An attempt to clarify some issues about the so-called psychopathic personality. By Hervey Cleckley, M.D., The C. V. Mosby Co., St. Louis, 1964, 500 pp. $9.75.*

Reviewed by: LOUIS H. NAHUM

The book is beautifully written, scholarly and convincing. In section I, he outlines the problem, what sanity is. In section II, he recounts the clinical manifestations of thirteen case histories followed by seven case histories of incomplete manifestations of what he calls the psychopathic personality. In section III is found a comparison with other disorders such as the psychotic, the psychoneurotic, the mental defective, delinquency, homosexuality, malingering and others. The author then goes on to describe in detail the general properties of the psychopath, his general poverty in major affective reactions. With a sex life that is impersonal, trivial, poorly integrated and with failure to follow any plan of life. He then goes on to present his basic hypothesis. The psychopath is a person who is sane by the standards of psychiatry, aware of all the facts which we ourselves recognize and above all, free of delusions. However, he conducts himself in a way quite as absurd as many of the psychotics.

In orthodox psychoses there is a more or less obvious alteration of the reasoning process or of some other of the demonstrated personality features. In the psychopath the observer is confronted with apparent sanity but there is a mask. Though the outward features of this mask are intact, his logical thought processes may operate and seem appropriate when tested verbally; in actual living he is a failure and this derives from his inability to grasp emotionally the major components of meaning or feeling in the thoughts he expresses and the experiences he goes through. He is unaware and lacks the ability to become aware of what important experiences in life mean to other people.

The psychopath holds no viewpoint at all and is free of any convictions in what might be called good or evil. He, however, is himself unaware of this because it is out of scale, or order, or mode of experience. There is a deep and far reaching and persistent blocking of ability to feel. As a result he lacks the ability to participate in the essence of life. What he lacks in himself he will be unable to recognize in others.

The psychopath's functioning postulates a selective deficit in feeling so that he is incapable of understanding strong affective components of action that ordinarily arise in major personal and social issues. The major issues of life do not matter to him, he cannot achieve true and abiding loyalty to any principle or any person.

The author rightly emphasizes that not all people showing these features should be regarded as totally disabled. It appears in every degree of severity like all other disorders and may constitute anything from a personality trait through handicaps of varying magnitudes including maximum disability and maximum threat to the peace of the community.

This book should be read by every physician who sees in his everyday practice people of varying degrees of lack of affect and varying degrees of disability resulting from this deficiency. We are not told how this comes about. Is it due to genetic defect or conditioned by lack of emotional bonds in infancy and childhood? However, it is a fascinating tale of a kind of personality disorder all of us should become aware of. This book cannot be read too widely both by physicians, social workers, nurses and the public itself.

SIMPLE SPLINTING: The Use of Light Splints and Related Conservative Therapy in Joint Diseases. By Jerome Rotstein, M.D. and forwarded by Jerome S. Tobis, M.D. with a chapter on the History of the Treatment of Arthritis by Laura S. Rotstein, M.A., W. B. Saunders Co., Philadelphia and London, 1965, 126 pp., illustrated, $6.50.

Reviewed by: DENIS S. O'CONNOR

This rather thin volume has been written by a rheumatologist apparently in the belief that his confreres who must of necessity provide rest for the arthritic joints of their patients are not knowledgeable with the techniques and materials for splinting joints.

Sixty-five pages are devoted to splint making techniques and the materials used for splints which is good information for the internist to possess but it is information which every orthopaedist who had any training would have. It has been the stated opinion of the reviewer that the competent rheumatologist should have "the viewpoint of the internist and the training of the orthopaedist" to successfully handle the arthritic patient's problem and this book would seem to indicate that that need still exists.

The chapter on the history of the treatment of arthritis is interesting but again the chapter on the anatomy of joints which is available in all anatomies and many standard work of orthopaedics could only be included here in the belief that the rheumatologist is deficient in this knowledge.

The chapter on the pharmacologic treatment of rheumatoid arthritis could hardly be beamed at the rheumatologists since in their field they would doubtless be fully conversant with all good and bad points of the drugs used in arthritis.

While this book obviously has value it is a little bit difficult to know to whom other than rheumatologists it might be recommended.

MODERN TRENDS IN IMMUNOLOGY, 1. Robert Cruickshank, Ed. Washington, Butterworths, 1963.

Reviewed by: BRYON H. WAKSMAN

This small volume (263 pages) is made up of a series of chapters dealing with current knowledge of antigens, antibodies, and their interaction; immunization and the role of natural and acquired immunity in various bacterial, viral, and protozoal infections; and problems of hypersensitivity, autoimmunity, and transplantation. These are written, with two exceptions, by English scientists who are recognized experts in the respective fields; and each is a wide ranging and masterly essay. The coverage throughout is more complete than one might expect in such a brief treatment, and all chapters are complemented by carefully selected bibliographics. A uniform style of good literary quality characterizes the whole, though the reading is made difficult by the condensed format.

The uniform excellence of this volume is marred by the absence of any consideration of the structure and function of the lymphoid organs in which the various immune responses are generated, of the ontogeny and phylogeny of these responses, of congenital and acquired anomalies of the immune response such as agammaglobulinemia, of neoplastic disease of the immune organs (myeloma, macroglobulinemia), of the effect of exogenous agents, such as x-irradiation and treatment with antimetabolites, on various immune responses, and finally of the diverse unresponsive states known as tolerance, paralysis and enhancement. Were these topics included, the book could easily serve as a first class text-book of present day immunology.

Contents of individual chapters may be summarized as follows. The treatment of "Antigens" by Davies includes a consideration of antigenic bacterial, viral, and tissue components and of proteins, carbohydrates, nucleic acids, and lipides as antigens, but little on recent work with antigenic polymers or on the chemical basis of antigenicity and specificity. Cohen's chapter on "Antibodies" discusses in detail the different molecular classes of antibody, their structure, the peptide chains into which they are split by reductive cleavage, and the fragments obtained by proteolytic digestion. The character of the antibody combining site and the localization of different biologic functions in particular parts of the molecule are presented. Weir's chapter on "Antigen-Antibody Reactions" includes a discussion of the primary binding forces (Coulomb, van der Waals, and hydrogen bonding) and of secondary phenomena such as precipitation, agglutination, neutrolization, complement fixation, and anaphylactic sensitization. Newer techniques of measuring antigen-antibody reactions are discussed in some detail, among them immunodiffusion, immunoelectrophoresis, passive particle agglutination, fluorescence, complement fixation, conglutinating complement absorption, PCA, and cytotoxicity in cell cultures. Howard, in a discussion of "Natural Immunity", includes humoral agents such as properdin and β-lysins, cellular activities (phagocytosis, reticulo-endothelial function, and intracellular digestion), and specific and nonspecific "opsonins". Chapters on bacterial, viral, and protozoal infections, by Cruickshank, Beveridge, and Fulton respectively, contain detailed discussions of individual organisms. The distinction is drawn between toxic, acute invasive, and chronic bacterial infections and between acute viral infections, relapsing infections (with change of antigenic character), and chronic infections. The relative importance in each case of antibody, of "delayed" hypersensitivity, and of nonspecific agencies such as interferon is considered. In Edsall's chapter on "Immunization", one finds a detailed discussion of widely accepted programs of immunization for various bacterial and viral infections, in the infant and in the adult. "Hypersensitivity" is discussed by Raffel, with due consideration of the cell types responsible for antibody formation and for delayed sensitization, the role of the thymus in these responses, and the mechanisms underlying a variety of human disorders known or thought to be immunologic in character. Glynn lists (and discusses) all mechanisms known to play a role in "Auto-immunity". These include: complex antigen formation from host constituents with exogenous materials, segregated (foreign) host antigens, host antigens appearing late in ontogeny (and therefore foreign), host components modified by chemical, physical, or biological agencies, foreign antigens with determinants similar to those present on host components, host cell mutation with formation of new antigens; also mutation of antibody-forming cells, or abnormal sensitivity of the antibody-forming organs to conventional stimuli. The book is concluded with a chapter on "Transplantation Immunology" by Howard and Michie. They discuss the genetic basis of graft rejection, first and second set responses, tolerance, graft-versus-host reactions, the role of small lymphocytes in graft rejections, and the role of the thymus.

On the whole, this is an excellent book.

PULSATILE BLOOD FLOW, Proceedings of the First International Symposium on Pulsatile Blood Flow, April 1963. Edited by Ernst O. Attinger, M.D., Blakiston Division of McGraw-Hill Book Co., New York, Toronto, London, 1964. 461 pp. $17.50.

Reviewed by: HAROLD LAMPORT

This volume is another one in the flood which inundates the world of medical science. Its springs are the closed meetings set up by energetic sponsors with a burning desire to bring together interdisciplinary groups. Many of the invited participants are asked to contribute papers which then are published in book form more than a year later. Thus their contents have been published orally to the in-group while the remaining out-group must wait more than a year for the same material. This delay is a consequence of the nature of man and the laws of probability. Where there are 25 papers to be edited and proof-read along with a welter of contentious discussion, inevitably some are much slower than others in getting their corrections back to the editor.

Pulsatile Blood Flow ranks high in excellence among the flood of proceedings. Pulsation of blood pressure has been known throughout the history of medicine but the difficulties have been tremendous in formulating an adequate theory relating the pressure and flow of blood, its rheological properties, and the mechanical structure and anatomy of the vessels in which it flows. Many of the best minds have been attracted to the problem but modern recording equipment has been needed along with sophisticated and advanced mathematical and physical skill for important progress to be made.

In this book, contributions by an international medley of scientists interested in hemodynamics are brought together. It is a substantial landmark in this field and will be valued by those whose training permits them to understand the highly technical papers. At this time, it is doubtful that many clinicians past their thirties will know enough mathematics and physics to profit from reading this book. Like François Villon, they can wonder: "Where are the snows of yesteryear?" Medical research is moving so rapidly in its application of the exact sciences that premedical education must perforce shift sharply in the same direction if it is not to offer obsolescent doctors to future patients. . . . But that is another problem.

This book is well-printed and put together. It is too bad that it costs $17.50 for its 462 pages. The likelihood is that its purchasers will be libraries and the United States government through the various Public Health grants that support much of the basic research in the circulation of the blood. And the price is not excessive in comparison with that of other such volumes.

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It has been noted that low-back disorders frequently "...are caused by truly mechanical conditions which yield to conservative treatment."[1] Basic to this conservative treatment are bed rest, a board for the bed, and applied heat. In addition, a good muscle relaxant is often helpful, as "...muscle relaxants are useful in chronic as well as acute low backaches."[4]

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A well-tolerated[7] skeletal muscle relaxant with "specificity of action,"[7] methocarbamol leaves normal muscle tone unaffected. Moreover, there is little likelihood of sedation[7]—a considerable advantage for the patient who must remain active and alert on his job.

Significantly, clinicians advise using a muscle relaxant "early and in adequate dosage."[8] In this regard, Robaxin (methocarbamol)—*particularly in the 750 mg. dosage (2 tabs. q.i.d.)*—offers optimal therapeutic benefits without a significantly increased incidence of side effects. And just as it works well as part of the basic regimen for low-back pain, so also does Robaxin (methocarbamol) often provide muscle relaxation in such conditions as musculoskeletal injury, chronic neurological disorders, and orthopedic situations.

BRIEF SUMMARY—Robaxin (methocarbamol) Tablets: Contraindicated in hypersensitive patients. Side effects (light-headedness, dizziness, drowsiness, nausea) may occur rarely, but usually disappear on reduced dosage. Hypersensitivity reactions develop infrequently.

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REFERENCES: 1. Soto-Hall, R.: Med. Sci. *14*:23, 1963. 2. McCarrol, H.R.: Paper read at the Annual Meeting of the American Medical Association, Atlantic City, June 16-20, 1963. See Medical News: J.A.M.A. *185*:39 (July 13), 1963. 3. Gordon, E.J.: Med. World News *5*:54, 1964. 4. Cozen, L.: GP *26*:82, 1962. 5. Larson, C.B.: Postgrad. Med. *26*:142, 1959. 6. Forsyth, H.F.: J.A.M.A. *167*:163, 1958. 7. Weiss, M., and Weiss, S.: J. Amer. Osteopath. Ass. *62*:142, 1962. 8. Rowe, M.L.: J. Occup. Med. *2*:219, 1960.

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Cardiac Pacemakers Prove Valuable Medical Tool

How good are implanted cardiac pacemakers—those artificial heart stimulators that have kept hundreds of human hearts beating that would otherwise be still?

Implantable pacemakers, says Simon Dack, M.D., of the Division of Cardiology, Department of Medicine at Mt. Sinai Hospital, New York, are good enough to be considered routine procedure in management of many types of heart blockage—a condition arising from lost or impaired nervous stimulation of the heart.

But they do have their drawbacks, notably a tendency to break down in use, and frequently have to be replaced, he wrote in an article in the current Journal of the American Medical Association.

In other words the theory of implantable pacemakers has proven to be sound. A properly operating pacemaker produces good results. The problem is one of mechanical or electrical failure of the pacemaker after it has been implanted in the body cavity and its electrodes imbedded in the heart muscle.

Still, the advantages outweigh the disadvantages, particularly in patients where decreased blood flow due to heart block leads to other serious complications of the brain and kidney as well as the heart itself, Dr. Dack indicated.

The implantable pacemakers, introduced about three years ago, are designed to deliver a mild shock to the heart 60 to 80 times a minute. These electrical impulses replace the normal nerve impulses to the heart which have been entirely or partially blocked by disease.

The earliest pacemakers were worn outside the body and connected to the heart by wires passing through the chest wall. Later power packs small enough for implantation were designed. These offered many advantages, including less danger of infection.

While drugs have also been effective in controlling some forms of acute heart block, Dr. Dack said, long-term management by drugs alone is not always satisfactory.

Age is no barrier to the use of an implanted pacemaker. "Most patients operated on have been over 60 years old, and a large percentage have been in their 70's and 80's and some even older," he added.

With proper preoperative preparation even "poor risk patients" can be brought through the surgery necessary for the implantation of pacemaker and its electrodes. "In our experience the immediate operative mortality has been only one in 54 cases," he added.

One major advance which has done much to reduce the hazards of implant surgery is the use of a catheter electrode for pacing the heart prior to surgery.

The catheter electrode is introduced into the heart through a vein to provide supplemental pumping stimulation for the heart. Hospitalization is required and long-term use is ruled out.

When used a few days prior to surgery, however, the catheter electrode serves to counteract weaknesses brought about by the decreased blood flow from the patients own failing heart so that the patient is brought to the operating table in the best possible condition.

"For these reasons," he said, "surgical implantation of a cardiac pacemaker need no longer be considered an emergency procedure, but an elective one."

Follow-up studies of 54 patients operated on for pacemaker implantation, showed that in two and a half years, seven (13 per cent) had died. Of these deaths, Dr. Dack said, one was probably due to pacemaker failure. The others, he added, were due to complications of the underlying disease which had made the use of a pacemaker necessary in the first place.

The most serious problem faced by the 47 patients being sustained by pacemakers has been pacemaker failure, Dr. Dack said. Twenty-two of these patients have required reoperations to replace or repair failing pacemakers. In all but two cases, however, the second operations were much less involved than the initial operation.

"Of the pacemaker failures," Dr. Dack noted, "13 were due to defects in the generator pack and 19 were due to broken or displaced electrodes or wires.

"Generators fail because of premature battery and component failure and leaks of tissue fluid into the unit. Electrode wires break because they cannot withstand the mechanical stresses (traction, flexion, tortion) of body, diaphragmatic and cardiac movement."

Despite such failures, the fact remains that the lives of many patients have been saved or prolonged, by the use of implanted pacemakers, he said.

It is important, however, that these patients be given close follow-up, he said. Also, they should be taught to check their pulse rate and report immediately any slowing or sudden increase in rate.

Generally, he added, there is sufficient time after recognition of the change in heart rate to readmit the patient to the hospital and correct the pacemaker failure.

Physicians Serving In 21 Legislatures

Physicians are serving in the legislatures of 21 of the nation's states.

Georgia, with six physicians in its House of Representatives, is the leader in the number of doctors holding state legislative office.

A survey by The AMA News, publication of the American Medical Association, shows that nine other states have one physician-lawmaker, 10 have two, and Virginia has four. Three doctors are members of Puerto Rico's legislative body.

Of the 42 physicians serving in legislatures, twice as many are in the House as in the Senate. There is a nearly even division between first-term legislators and re-elected incumbents. At least one physician was elected after several years away from the legislature.

Doctors now serving represent both parties, and some ran as independents or on "blue ribbon tickets" of picked candidates.

In addition to those states with physicians, at least two legislatures, Ohio and Oregon, have a physician's wife as a member.

The six physicians elected to Georgia's House of Representatives last November are John W. Acre, Hiawassee; N. Grady Coker, Canton; Frank P. Holder, Eastman; A. Sidney Johnson, Elberton; Carl P. Savage, Montezuma, and Charles B. Watkins, Ellijay. Drs. Acre, Coker, Johnson and Holder all have served previously in the Georgia General Assembly.

The four physicians who served in the 1964 session of the Virginia General Assembly, which does not meet again until January, 1966, (with an election between now and then) are: Senate—J. D. Hagood, Clover; House — Virgil J. Cox, Galax; Walter C. Elliott, Lebanon, and W. A. Pennington, Buckingham.

States with two physicians in their legislatures include.

Arizona—Walter P. Sherrill, Phoenix, and Charles W. Sechrist, Flagstaff, both in the House.

Idaho—John E. Edwards, Council, and Kitchener E. Head, Driggs, both in the House.

Illinois—William A. Moore, Olney, and Paul P. Boswell, Chicago, both in the House.

Indiana—Otis R. Bowen, Breman, House, and James M. Kirtley, Crawfordsville, Senate.

Kentucky—Mitchel B. Denham, Maysville, and Roy D. Sanders, Pike County, both in the House. (Kentucky's legislature will not meet again until next January, and there is an election before then.)

Montana—Robert T. O'Neill, Roundup, and William E. Harris, Livingston, both in the Senate.

Oklahoma — Richard D. Stansberry, Oklahoma City, Senate, and John W. Drake, Oklahoma City, House.

Pennsylvania — George J. Sarraf, Pittsburgh, Senate, and John C. Cavender, Hop Bottom, House.

Utah—G. Stanford Rees, Gunnison, Senate, and Thomas C. Hardy, Salt Lake City, House.

Washington—A. O. Adams, Spokane, and Homer W. Humiston, Tacoma, both in the House.

Those states with one physician in the legislature are:

California—Stephen P. Teale, West Point, Senate.

Hawaii—James F. Fleming, Maui, Senate.

Minnesota—Vernon Sommerdorf, St. Paul, House.

Nebraska—S. H. Brauer, Sr., Norfolk, unicameral legislature.

North Dakota—James H. Mahoney, Devils Lake, Senate.

Oregon—Morris K. Crothers, Salem, House.

Rhode Island — William R. Reid, Providence, House.

South Dakota — G. Robert Bartron, Watertown, Senate.

West Virginia—David W. Mullins, Logan, Senate.

Puerto Rico—Antonio Fernos-Isern, resident commissioner at U.S. Congress 1948-1964, Santurce, Senate; Leopoldo Figueroa Carreras and Pablo Morales Otero, both Santurce, and both in the House.

States reporting no physicians in their legislatures are:

Alabama, Alaska, Arkansas, Colorado, Connecticut, Delaware, Florida, Iowa, Kansas, Louisiana, Maine, Maryland, Massachusetts, Michigan, Mississippi, Missouri, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, South Carolina, Tennessee, Texas, Vermont, Wisconsin and Wyoming.

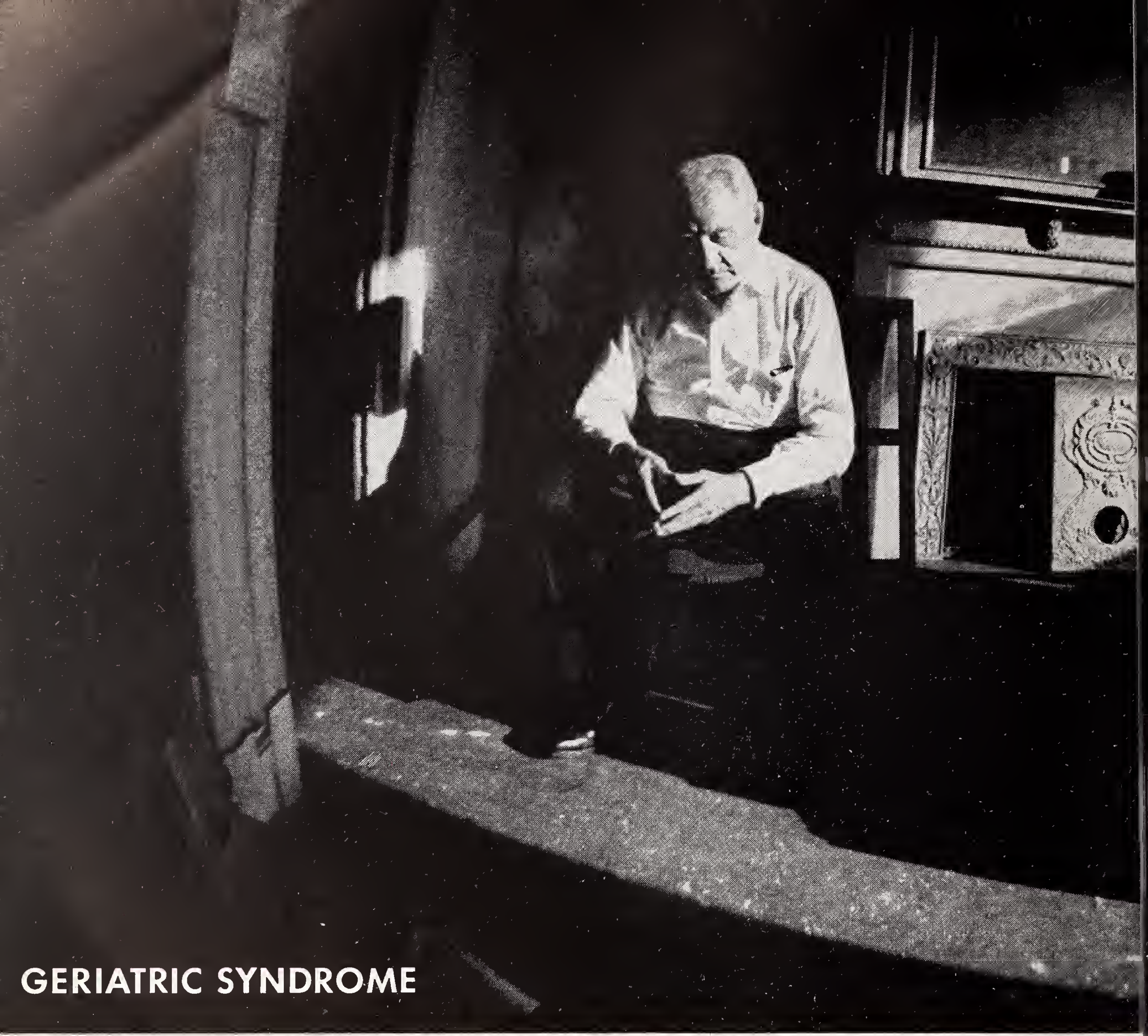
Largest AMA Convention In History

The American Medical Association's 114th annual convention, June 20-24, in New York City is expected to be the largest in AMA history.

An attendance of 69,500 including 25,000 physicians, is expected. The largest previous AMA convention was in 1961 in New York City when 46,679 attended, including 23,083 physicians.

A diverse scientific program covering virtually every medical specialty will be presented, according to Gilson Colby Engel, M.D., Philadelphia, chairman of the AMA's Council on Postgraduate Programs.

Dr. Engel said the 1965 program will provide "outstanding educational opportunities for mem-



when a change in environment overwhelms him with anxiety

Failing health, financial difficulties, or the death of a spouse are among the reasons why elderly people may be obliged to leave their familiar surroundings. Moving in with children or entering a home for the aged may satisfy practical requirements but can be psychologically traumatic since emotional resilience tends to diminish with age.

Even when anxiety reaches overwhelming proportions, you can counteract it promptly with the potent tranquilizer—Atarax (hydroxyzine HCl).

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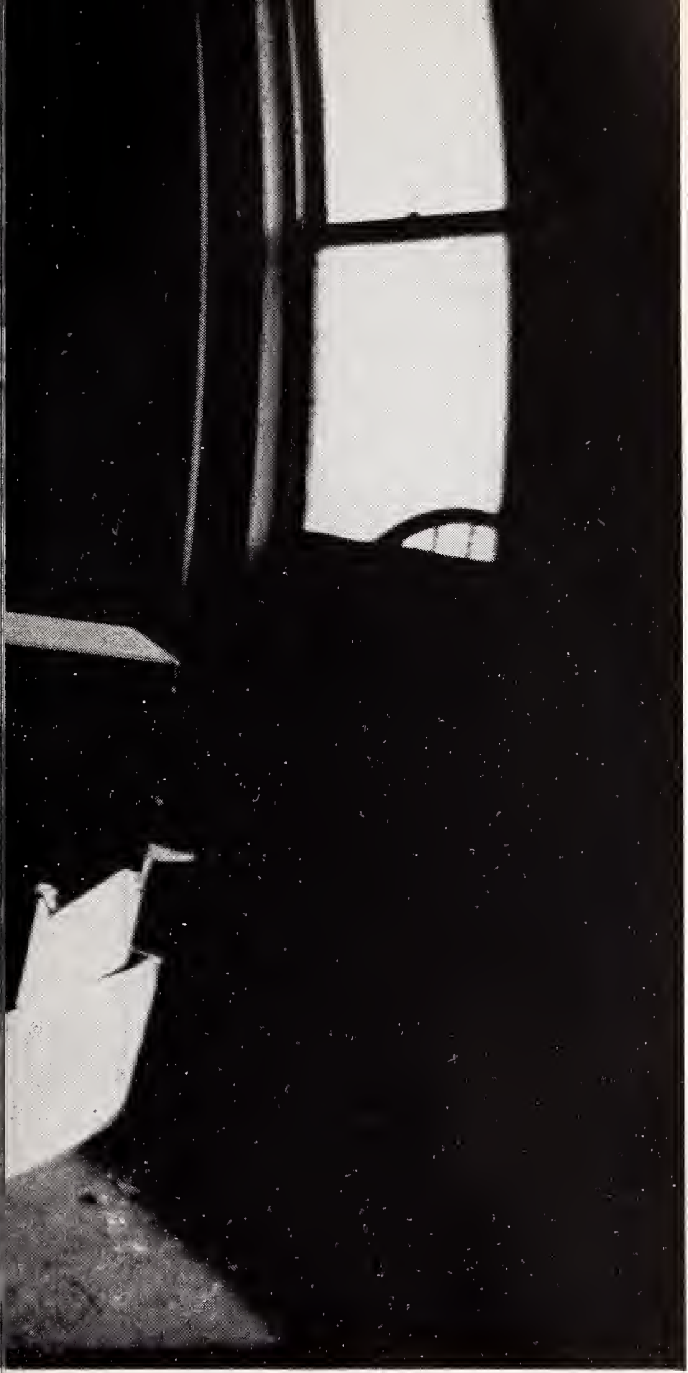

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dosage reduction. Dryness of the mouth may
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its, narcotics such as meperidine, barbitu-
es, and anticoagulants. In conjunctive use,
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ue reactions have been rare. I.V. adminis-
tion should be slow, no faster than 25 mg.
minute, and should not exceed 100 mg. in
y single dose. Particular care should be used
insure injection only into intact veins; a few
tances of digital gangrene occurring distal
the injection site have been attributed to
dvertent intraarterial injection or periarte-
l extravasation, both of which should be
oided. **More detailed professional informa-
n available on request.**

bers of all fields of medicine, including specialists and general practitioners."

Six general scientific sessions will be coordinated by secretaries of various AMA specialty sections. Topics include hearing, adverse reactions, non-narcotic drug addiction, metabolism in growth development and aging, diagnostic cytology, and organ transplantation.

Another highlight will be the fifth Multiple Discipline Research Forum, presented this year as a program of the AMA Section on Experimental Medicine and Therapeutics. Edwin H. Ellison, M.D., Milwaukee, again is serving as forum chairman. Dr. Ellison said 60 reports based on research being done throughout the country will be presented.

AMA's other scientific sections also will present programs for physicians in their specialties. The more than 350 scientific exhibits will be housed in the New York Coliseum, which also will be the site of many scientific sessions as well as an extensive medical motion picture and television program.

The AMA's policy-making House of Delegates will meet in the Americana Hotel.

Ampicillin, A New Oral Penicillin

The American Medical Association's Council on Drugs recently issued a preliminary report on a new oral penicillin, ampicillin.

The drug, described in the current (March 15) Journal of the American Medical Association, was reported to be more effective against certain bacteria than some previous types of penicillin.

Ampicillin is useful in fighting infections of the lower respiratory tract and middle ear caused by Hemophilus influenzae, sometimes suffered by children. It also may be used in treating infections of the urinary tract, although other antibiotics are equally effective, the Council said.

Ampicillin supplements penicillin G, an antibiotic which has wide application. The new drug may be absorbed more readily by the body in some cases. Both drugs are effective against several forms of gram-negative bacteria.

An advantage of oral penicillins, such as ampicillin, is that it can be administered to children by parents, on the advice of a physician.

The Council on Drugs cautioned, however, that ampicillin is not a substitute for other widely used antibiotics. Such usage might increase resistant strains of the bacteria it is designed to kill.

The Council's preliminary report is an initial assessment of the new drug, based on available evidence. It does not necessarily represent the final opinion of the Council on Drugs, nor does it imply approval, endorsement, or acceptance of the drug.

Physicians And Their Writing

As literate men with wide-ranging interests, physicians have written much more than mere technical medicine and have far broader cultural interests.

"Physicians have always been writers, and medicine is closer to literature than many people realize," said Dr. Lester King, senior editor of the Journal of the American Medical Association. "Medicine has a literary, as well as scientific, dimension. It is this dimension which we want to emphasize in our special book number."

The second annual book issue of the Journal will be published April 12.

Doctors have shown themselves to be skillful as well as precise writers, Dr. King said. Many of their books have a special flair or style, and show the work of artful masters of the writing craft.

The special section includes an account of Andreas Vesalius. Vesalius' book, "De humani corporis fabrica," is an artistic and scientific monument of the High Renaissance, writes John B. DeC. M. Saunders, M.D., of San Francisco. Vesalius and the "Fabrica" exemplified the tensions and struggles between the old and the new science, Dr. Saunders said.

The late Harvey Cushing (1869-1939), one of America's finest surgeons, inspired the founding of the Historical Library in the Yale University School of Medicine with his own famed collection of books.

Cushing persuaded two of his physician-collector friends to join him in the venture. The collections of Arnold C. Klebs of Nyon, Switzerland, and John F. Fulton, who had come to Yale in 1930 as professor of physiology, plus the books of Cushing, formed the nucleus of the library.

Cushing's interest in book collecting was in turn inspired by his famous teacher, Sir William Osler. Madeline E. Stanton, Yale Medical librarian, describes Cushing's accomplishments as a serious collector of medical literature.

"How can isotopes be made interesting, electrolytes entertaining, and chromosomes crystal-clear? . . . Knowledge is effective only if it can be widely understood and applied, and the function of the writer who communicates it successfully and accurately is second only to that of its discoverer."

Seventeen authors are represented in the special Book Section of the Journal of the American Medical Association. The Journal's April 12 cover includes four-color reproductions of illustrations from a 13th Century illuminated manuscript.

The illustrations symbolize the continuing need for support of art, culture, and scientific inquiry, a Journal editorial said.

Most Radiation Victims Recover

Informed medical care can improve a radiation victim's chances, and sometimes make the difference between death or recovery, says an editorial in the current Journal of the American Medical Association.

"We should discard mistaken impressions that all radiation injury is irreversible," the editorial said.

"Most of the persons who have been accidentally exposed to radiation have recovered without serious residual effects. With very high doses early death is inevitable, and from very low doses spontaneous recovery is certain."

But it is at intermediate doses, near the lethal level, that informed medical care can have such important effects, said the editorial.

The Archives of Environmental Health, a publication of the AMA, summarizes current information on diagnosis and treatment of radiation casualties:

When a radiation accident does occur, the site of the accident should be isolated and not disturbed before expert help is available, the Archives article said.

Clothing of the injured should be labeled and preserved.

Records of all pertinent information should be made promptly to establish the cause and to help determine the radiation dosage received by exposed persons.

"In general, persons unfamiliar with radiation accidents tend to be excessively fearful of a possible radiation hazard," said the JAMA editorial. "For this reason, they may neglect the care of the patient, simultaneously augmenting the patient's distress by frightened behavior.

"Radioactivity induced in the patient by neutron exposure is no hazard to anyone else. However, if radioactive contamination of the patient has occurred, it may be of sufficient amount to constitute a potential hazard to medical personnel.

"Only by competent monitoring, intelligently interpreted, can the extent of the hazard, if any, be determined, and only by this means can rational management of the situation be arranged," the editorial said.

"Even though the atomic-energy industry has a good safety record and careful management has resulted in fewer accidents than might reasonably be expected, serious radiation accidents continue to occur in the United States.

"As reactors and radioisotope programs increase in number, additional accidents both here and abroad are to be expected, and physicians will inevitably be called upon to give medical care to the injured," the editorial said.

Connecticut Medicine

Connecticut State Medical Journal

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PRESENTATION OF THE FIFTY YEAR MEMBERSHIP AWARD (see page 405)

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Connecticut Medicine

editorials

Radio-Frequency Stimulation: A Research And Clinical Tool

The clinical use of electrical stimulation techniques is comparatively recent having achieved its most widespread application in the last six years in the field of cardiac pacing. The technique is based on Faraday's Law, namely if the amplitude of the current flowing through a primary coil varies in time, it will produce a voltage whose amplitude varies in time in an adjacent secondary coil. Physiologists have used this "inductorium" since the middle of the nineteenth century.

Thirty years ago the induction method was used to stimulate structures within the body by having a primary coil outside and the secondary coil within the body.[1] A more efficient variation of the induction method called radio-frequency induction was developed by Newman, et al in 1937.[2] The method was adopted by other physiologists particularly Alexander Mauro who was formerly at Yale and now at the Rockefeller Institute.[3] It is now in use by clinicians for cardiac pacing and soon for bladder emptying and perhaps for phrenic nerve stimulation in cases of respiratory failure due to paralytic poliomyelitis. In each of these areas the physioligc problems as well as the technical problems are different and their solution obviously will vary depending upon solutions of the physiologic and technical difficulties.

One technical problem of radio-frequency stimulation of the heart was electrode breakage since they are flexed sixty to eighty times per minute continuously. This produces great stress on the wires. Breakage is also assisted by decomposition of the electrode material which erodes at the electrode site of stimulation unless chemically stable materials like platinum are used. This was solved by Eisenberg, et al by using four stranded helically coiled Elgalloy electrode as the negative electrode and platinum-iridium wire for the positive or indifferent electrode. Additional problems of insuring against mechanical breakage of the transmitting coil, connecting leads, making the unit shock

THE COVER

PRESENTATION OF THE FIFTY YEAR MEMBERSHIP AWARD

The cover photograph and story for this issue concerns awards for 50 years of membership and service, which were presented to six members of the Society during a ceremony at the Annual Dinner of the 173rd Annual Meeting and Scientific Assembly, April 27-29 at the Statler-Hilton Hotel, Hartford.

Dr. James R. Cullen, newly installed president of the Connecticut State Medical Society, is shown in the cover photo, left, presenting 50-year membership awards to, left to right, Dr. Hugh B. Campbell, Norwich, Dr. Maxwell Lear, New Haven, Dr. Jacques H. Green, North Haven, and Dr. Harry L. F. Locke, Hartford. Awards were also presented to Dr. Herbert Thoms, Stony Creek, and to Dr. Frederick H. Hynes, New Haven, both of whom were unable to attend the formal presentation.

There are presently 36 other physicians who have previously received this award and who reside in Connecticut and other states.

One woman physician is a member of the group: Dr. Maude T. Griswold, of Harwinton.

Other veteran members are Dr. Joseph H. Beaudry, Dr. Abraham Bernstein, Dr. Charles W. Gardner, and Dr. Charles H. Sprague, all of Bridgeport; Dr. Eliot S. Cogswell, Dr. Claude V. Flaherty, Dr. Arthur B. Landry, Dr. Otto G. Wiedman, Dr. Morris Tuch, Dr. Charles W. Daly, and Dr. Albert R. Keith, all of Hartford; Dr. John C. Rowley, Dr. H. Gildersleeve Jarvis, Dr. Clinton D. Deming, and Dr. Harold S. Backus, all of West Hartford; Dr. Albertus K. Boardman, Dr. Marvin M. Scarborough, Dr. Charles T. Flynn, Dr. Ralph W. Nichols, and Dr. George Goldman, all of New Haven; Dr. Henry N. Costello, Madison; Dr. Arthur C. Smith, Danbury; Dr. John F. O'Brien, Waterford; Dr. Frank E. Wilson, Wethersfield; Dr. Michael A. Parlato, Derby; Dr. Charles H. Turkington, Litchfield; Dr. Robert R. Agnew, Norwich; Dr. Raymond H. Ryder, Waterbury; Dr. Fred M. Smith, Willimantic; Dr. Harold B. Woodward. Bristol: Dr. Edward H. Kirschbaum, Santa Barbara, California, formerly of Waterbury; Dr. Thomas Russell, Mt. Dora, Florida, formerly of Hamden; Dr. Wilder Tileston, Carmel Valley, California, formerly of New Haven; Dr. Charles E. Hyde, St. Petersburg, Florida, formerly of Bridgeport; and Dr. George A. Leonard, Fort Pierce, Florida, formerly of Waterbury.

proof in case it is dropped on a concrete floor, water proofing it against accidental immersion and making it insensitive to changes in temperature over a specified range have all been overcome.

In clinical situations there are two problems, one physiological, namely the point on the ventricle which when stimulated produces the most efficient contraction has been dealth with.[4] The psychological problem is more difficult to evaluate. Some physicians prefer to use the external cardiac pacing unit within the body without accessible controls. They fear that with an external unit the patient might become preoccupied with the unit and this may outweigh its advantages. Others, notably Eisenberg and his group, found less than ten per cent of their patients sufficiently preoccupied with the external unit to make its location a problem.

Since 1959 these workers used the radio-frequency inductive technique for cardiac pacing in twenty-six patients of all ages, in one continuously for thirty-six months. With the external unit outside the body they had complete control over pulse rate and amplitude of stimulation which instrumentation provides. There is also present the ability to discontinue stimulation when desirable without compromising the future of the implanted components. There is an extremely important control on pulse rate, because in some patients heart block is known to disappear in time especially after surgically induced heart block. Such patients have to be watched because ventricular fibrillation may occur if competition developes between the natural pacing mechanism which has returned and the external electrical pacer. In such a situation external pacing must be discontinued.

It is significant that in half of Eisenberg's patients heart block did disappear temporarily. If the receiving coil remains in place under the skin, pacing may be resumed any time by repositioning the antenna coil over the receiver coil. Furthermore an external unit allows for flexibility which is denied to the surgeon if the unit is all under the skin. For example, one can increase the heart rate to an optimum level in order to lower venous pressure in a critically ill patient or in one during fever.

Eisenberg and his group believe that there must be instances where bladder stimulation by radio-frequency control could be life saving. Emptying of the bladder at intervals especially in paraplegics could prolong the lives of many patients by avoiding catheterization and its accompanying infection. They studied paraplegic dogs and showed that evacuation of the bladder can be produced by three different types of radio-frequency stimulation. Stimulating the roots of the sacral nerves produced complete voiding but there was concomitant twitching of the leg. Vesical nerve stimulation also causes voiding but also twitching of the thighs. It is clear that electrical stimulation of the bladder can occur but there are a number of problems that still need to be solved. Where is the optimum site of stimulation in a human? Will the bladder become refractory to stimulation? Can one avoid the stimulating current from reaching adjacent tissue and cause twitching and discomfort?

Phrenic nerve stimulation in patients is not new. A detailed study of the feasability of phrenic stimulation was made by Sarnoff in 1948,[5] in patients suffering from bulbous poliomyelitis. To produce reasonably good imitation of normal respiration, he stimulated the phrenic nerve through wires extending through the skin by increasing and decreasing peak values. The irregular and spontaneous respiration of his patients could be completely suppressed and replaced by effortless externally controlled respiration which contributed greatly to the comfort and recovery of his patients.

There was however difficulty in maintaining prolonged stimulation and thus the question arose whether this might be possible and effective over long periods. So many technical difficulties were involved in stimulating the phrenic nerve and lack of feasability of prolonged stimulation of this particular nerve by means of external wires, all led to the discontinuance of efforts in this direction. Radio-frequency induction technique appears to have removed the technological obstacles.

If certain patients with bulbous poliomyelitis have intact phrenic nerves, then it should be possible to stimulate them electrically and remove the patient from the iron lung. There must also be patients with either chemical or physical damage to the higher respiratory centers who would be assisted by such a technique. Then there are the "Pickwickian" obese patients who are physically unable to achieve adequate motion of the diaphragm and who develop an excessively high blood content of carbon dioxide. Finally there are those patients who develop respiratory difficulties following operations. If a good effective method could be developed with radio-frequency stimulation to aid in respiration by stimulating the phrenic nerve, we already know the kind of patient in whom such a procedure might be life saving.

Eisenberg and his group have stimulated the phrenic nerve in dogs by radio-frequency induction technique for as long as six months and the contraction of the diaphragm has been effectively controlled. There remain problems requiring solution before the method can be applied clinically. For example, it was noted that stimulating the phrenic nerve on one side of the body inhibits the contralateral phrenic and produces immobilization of the diaphragm on its side. On cessation of stimulation the inhibited nerve resumes its function, the nerve which has been stimulated shows supression of

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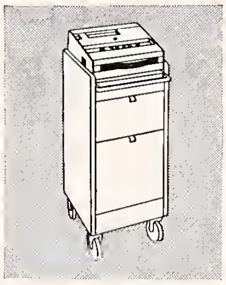

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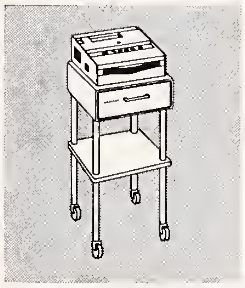

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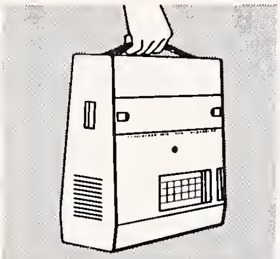

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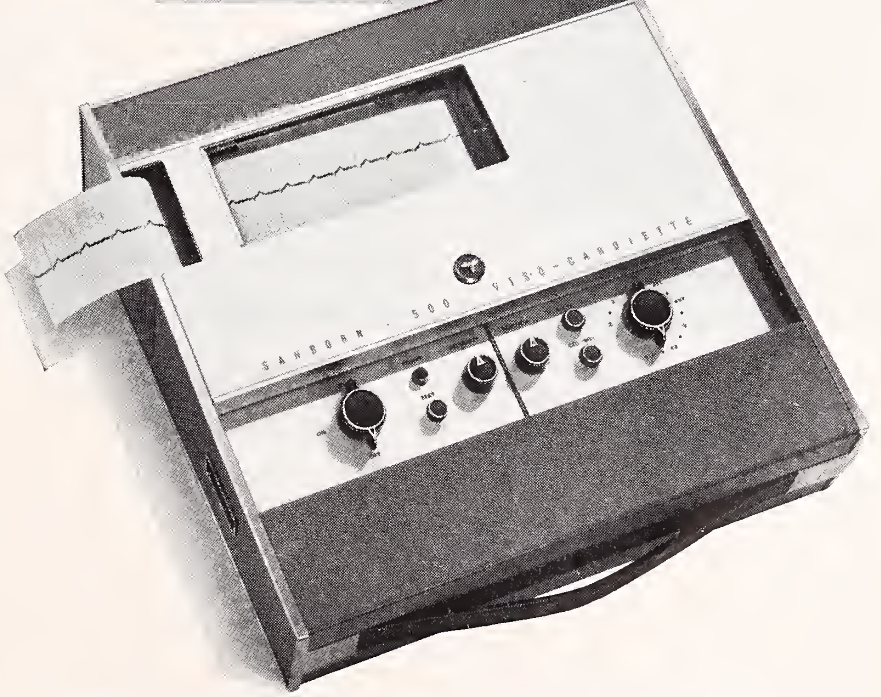

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activity for twelve to seventy-two hours. Obviously the cause of these changes induced by prolonged stimulation need further investigation.

It is clear that an important science tool has been fashioned for the clinician which has several uses and particularly in cardiac pacing has already shown its life preserving value. But it has also led to fundamental physiologic contributions in our understanding of bladder function and phrenic nerve behavior.

L.H.N.

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Breakthroughs In Research On The Nervous System

There are at least 10-12 trillion interneurons in the nervous system. If we think of each neuron as one tube in a computer, the complexity of the nervous system assumes unimaginable proportions. Nevertheless it has to be understood sooner or later and numerous efforts are under way to do just this. The latest effort in this regard is in the Biological Systems Laboratory of the California Institute of Technology. Here medical, biological and psychological teams assisted by mathematicians, systems engineers, and computer scientists are cooperating to uncover the organization of the most complex "computer" in the world, the central nervous system.[1]

There have already been several breakthroughs in understanding the brain which have been made possible by the development of microelectrode recording techniques with electrode tips as small as 0.1 mu. These can pierce a living receptor cell interneuron or axon and measure its electrical activity as a basis for determining its functional properties or either gathering information or processing it to abstract specific codes.

For example, the first stage of conversion of light energy in the visual photoreceptors has been established in rather precise terms as a molecular conversion of a photopigment by light photon interaction. Many significant concepts of the neural network have come from research on vision. Ninety per cent of all sensory information is gathered from the eyes. Light falls on 129 million rods and cones and their signals are then reprocessed by 20 million interneurons which send information up 1 million fibers in the optic nerve to the sensory network. The interneurons produce a successively higher stage of abstracting and coding a specific property of the visual field. By intensive neuro-probing experiments in the retina, lateral geniculate ganglion, and the sight sensory cortex of the cat, Hubel[2] has established for the first time a general concept of how images or pattern shapes are developed in the cat brain, by recognizing successively more complex patterns in successively higher neural stages.

It appears that the retina and lateral geniculate cells recognize only small dots and circular fields. The sensory cortex then forms simple linex segments of images from these, and successively higher stages combine the line image formation into area or two dimensional patterns of successively greater size and complexity. Similar functional properties for color discrimination have been found on the lateral geniculate.[3]

Then there are the experiments by Sperry[4] that involve training animals to learn some rather elaborate program of visual stimuli and combination of paw movement to obtain food. Some animals have normal connections between the right and left cerebral hemisphere through the corpus callosum. Other animals so trained have their corpus callosum severed. The two brains are split. This technique is being pursued to clarify the over all organization of the central nervous system.

This type of technique together with recording the EEG during deep probes and electrical shock stimulus of different portions of the brain has already established certain significant facts about memory; the recall of memory and its presentation at the conscious image level. Short term memory lasting several minutes can be identified as electrical neural activity propagating and reverberating in the C.N.S. This type of memory can be destroyed by electrical shock or brain injury.

In contrast to this is the long term memory which has as yet not been identified as residing in any specific portion of the brain. Apparently any information committed to permanent memory is held for the life of the system. There is, however, a change which takes place with emotion, age, or injury during which the power to recall information at the conscious level or motor output systems is lost. In the case of memory suppression as worked out by Freud, recall can be achieved by analytic techniques. The increasing difficulty of recall with advancing age is linked to the reduction of the interneurons. We begin life with ten quadrillion interneurons but after age 35, we lose about 10,000 per day. While the memory traces are held for the life of the system, the progressive loss of interneurons with age progressively interferes with the channels for recall.

Recently discovered "pacemaker cells" may give us a clue to memory. These are individual neurons or simple neuron networks within certain nervous systems who fire from an implanted memory of some past event or sensory input and are independent of immediate daily activity and sensory experience. They are like "biological clocks" such as are present in hibernating animals such as squirrels and signal the start and stop of hibernation by their change of firing rate. The variation of the pacemaker clock rate is determined by the past climatic conditions and is remembered within the interneuron itself. Similar pacemaker cells in the sea snail Aplysia remember past daily variations of light and dark.[5]

It appears that the complete structural form of the nervous system, all of its cells and dendritic connections is specified by the genetic code and is present in its entirety at the birth of the animal. This genetic code specified time for the optimum development of specific portions of the system (critical periods of behavioral development).[6] An interesting property implanted by the genetic code in some animals at birth is the "built in" knowledge to immediately perform some highly complex task or "intelligent process." For example, some birds are given the power of celestial navigation. Certain wasps have the knowledge to construct complex mud nests and to kill and prepare their prey in a most complex manner.

What however is not specified at birth is the precise functional relationships within the various cells. For instance, cats deprived of visual information of an eye during the first 6-8 weeks of life, lose the life of many of the interneurons in the lateral geniculate and sight sensory cortex with resulting partial or complete impairment of vision of this eye. That the nature of the development depends on the form of sensory stimulus to which the system is exposed is dramatically illustrated in the duckling. At a certain definite period within only a few hours and several days after birth, the sight of every moving object will suddenly be interpreted by the duckling as its mother, an object to be followed continuously for a period of its adolescent life. If it sees some other moving object at this time, it will be trained to follow it instead.

Truly we are at the threshold of a breakthrough in our understanding of the way the nervous system functions. No one can anticipate all the consequences of this knowledge for the future of mankind. Let us be alert to the possibilities and hope it will produce a better and more competent human being in the future.

L.H.N.

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Physiology And Medicine: Medical Treatment Of Cerebral Swelling

Brain swelling is one of the uniform responses of the brain to any form of noxious influence. It has proved to be a major cause of morbidity and mortality in association with a wide variety of lesions involving the central nervous system such as trauma, neoplasms, infarction, infection and toxic and metabolic processes. Cerebral swelling has also plagued the neurosurgeon as a cause of severe complications after all types of operative manipulation. At one time surgical decompression was a frequent non-specific procedure carried out primarily for the purpose of giving the swollen brain more room so that its function might be preserved. Obviously a physiologic method of brain decompression would improve the outcome in severe craniocerebral trauma as well as the results after intracranial surgery in which cerebral swelling is a complication of the operation.

Physiologic decompression of cerebral swelling involves the use of at least two kinds of procedures. One, hypertonic solutions, to dehydrate the brain, and another the reduction of cerebrospinal fluid pressure. If successful either or both of these procedures would avoid the need of surgical decompression.

The first experimental production of brain swelling in animals followed the intravenous administration of distilled water.[1] The swelling was then reduced by injecting hypertonic solutions which lowered the cerebrospinal fluid pressure and decreased the intracranial mass. Following these experiments a variety of hypertonic solutions came into clinical use: 50 per cent glucose, 50 per cent sucrose, 25 per cent saline, 50 per cent magnesium sulphate, concentrated human albumen and plasma. By raising the osmotic pressure of blood plasma in brain capillaries, these solutions reduced the volume of extracellular and intracellular fluid in the brain. The process however was not limited

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just to the brain but occurred similarly throughout the body with a resultant increase in circulating blood volume as well. The increased blood volume led to a delayed increase of intracranial pressure even above the level before the hypertonic solution was first given and as a result the method fell into disuse.[2] In retrospect one might have predicted this type of result by the method of "strong inference."

In 1956 Javid and Settlage[3] employed hypertonic urea solution in amounts of 1 to 1.5 grams per kg. body weight in 30 per cent solution intravenously in patients in whom a temporary reduction of brain swelling was urgent. The high concentration of urea in the blood creates an osmotic gradient initially unopposed in the brain and the cerebrospinal fluid, because urea penetrates these areas very slowly. Dehydration is greatest in 20-30 minutes and returns to the original levels in six hours without the rebound phenomenon mentioned above. It is accompanied by a profound diuresis. Obviously it is not used if the patient is already dehydrated or if renal damage is present. Nor will it be the method of choice if an intracranial hematoma needs to be evacuated. Bearing these factors in mind, the method has been remarkably free of complications.

More recently mannitol[4] has been administered in the same manner and with much the same results and with even less of a rebound effect than with urea and longer lasting. A 20 per cent solution containing 1.5 to 2 grams per Kg. body weight is given over a period of 10-20 minutes and this results in a reduction of cerebrospinal fluid from 30-60 per cent for 2-4 hours.

The anesthesiologists[5] have offered another means of reducing cerebral swelling during neurosurgical operations. They produce a passive kind of decongestion by hyperventilation, muscle relaxants combined with removal of cerebrospinal fluid through a lumbar puncture needle. It is the most satisfactory method of reducing brain mass without any rebound, of any method available to facilitate brain surgery. Thus anesthesiology has contributed expertly to accomplish the desired result without production of cerebral anoxia.

The most recent significant means of reducing cerebral swelling is the use of high doses of cortisone.[6] It was discovered quite by chance in 1952 that cortisone is protective in operations in and about the sellaturcica. Though first used in the belief such patients would lose ACTH and become cortisone deficient, it soon became clear that cortisone was protective even if the pituitary was not deficient. A strong inference was that cortisone

in the overweight stable adul

...fasting serum levels of insulin are usually normal, postprandial levels excessive[1-3]

...insulin acts in adipose tissue via hexose monophosphate shunt, principal path of glucose conversion to storage fat[1,4]

...excessive endogenous insulin acts to stimulate lipogenesis and weight gain[1,3,4]

somehow assisted in reducing cerebral swelling, probably by preventing increase in cerebrospinal fluid pressure.[7]

The method became established in 1961 when Galicich[8] first reported using large doses of cortisone in the form of dexamethasone just before craniotomy. These patients had unusually smooth operative and post-operative courses. Further clinical observations have yielded dramatic examples of improvement in neurologic status and reduction in evidence of increased intracranial pressure in patients with primary and metastatic intracranial tumors as well as after trauma.[7]

At the present time Watson[7] administers an initial dose of 10 mg dexamethasone i.v. and 4 mg i.m. every six hours to all patients admitted with evidence of intracranial pressure due to neoplasms. Within 24 hours most such patients show marked improvement in the state of consciousness, in the level of their vital signs. They are in better condition to undergo contrast studies and craniotomy. The steroids are maintained in high concentration during the post-operative period and then tapered off gradually starting about the third to sixth post-operative day. Even patients with inoperable malignant gliomas or metastatic tumors have been maintained comfortably on an ambulatory basis for prolonged periods on maintenance doses of 2-4 mg per day of dexamethasone.

Research into the etiology, mechanism and treatment of cerebral swelling has greatly eased the neurologic surgeons task. His results have progressively become better as physiologic research has added several procedures to his armamentarium. He has been offered effective hypertonic solutions for intravenous administration. He has the benefit of controlled spinal fluid drainage and a reduction in respiratory alkalosis by controlled hyperventilation. He has learned how to prevent the permeability of the blood brain barrier through the anti-inflammatory action of exogeneous steroids.

L.H.N.

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Mycoplasma In Human Disease

It took over two decades of continuing study on acute respiratory diseases, studies initiated by the Commission on Acute Respiratory Diseases in World War II to culminate in a discovery that primary atypical pneumonia was not caused by a virus even though it was a filtrable agent, but rather by a coccal and rod-shaped organism now called mycoplasma pneumoniae. The agent first called a virus by Eaton has a large size (180-250 mu) and a sensitivity to demethylchlortetracycline which originally posed some difficulty in classification. But the difficulties extended beyond just classification. It also arose from inability to culture the organism and therefore from lack of immunologic studies which require a pure culture of any organism.

Marmion and Goodburn[1] finally did visualize small coccobacillary bodies in the mucus layer covering the bronchial epithelium when a chick embryo was infected with Eaton's agent. It was simple thereafter to show that these colony-like structures in stained preparations of infected tissue culture corresponded with the areas of specific immunofluorescence. The possibility was at once apparent that Eaton's agent was a pleuro-pneumonia like organism (PPLO) rather than a virus.

The next step was to try to grow this organism on an artificial medium if it was not a virus and this Chanock, et al.[2,3,4] succeeded in doing but it took several serial passages and patience to await a late growth on agar after 7 days. Subsequently, colonies appeared more rapidly and by the 5th passage the organisms were recognized on the 3rd day following inoculation. From these successes the authors were able to show that the mycoplasma from agar cultures reacted specifically in immunofluorescence examinations employing convalescent phase serum from patients with primary atypical pneumonia whereas in the acute phase the serum failed to react.

The field of mycoplasma infections broadened when in controlled field studies of marine recruits, it was found that myocplasma caused a variety of disease states including febrile respiratory illness as well as atypical pneumonia. Furthermore a double blind study of the value of demethylchlortetracycline in the treatment of atypical pneumonia indicated that this antibiotic agent was effective in specific therapy. The final proof that mycoplasma pneumoniae was the etiologic agent of primary atypical pneumonia with positive cold agglutinins was provided by the classic human-volunteer inoculation experiments by Chanock, et al. who used propagated organisms from tissue culture and Couch who used organisms propagated on artificial media. These workers produced the respiratory disease in humans and recovered antibodies to the organism in the patients' sera. Koch's postulates were thus satisfied in this series of brilliantly conceived studies.

Atypical pneumonia was not the only disease which turned up on inoculation of volunteers. There was a significant and unexpected occurrence of myringitis associated with bullae and hemorrhage in 11 of the 27 men that were free of mycoplasma pneumonia antibody but were inoculated with PPLO. Pneumonia developed only in 3, febrile upper tract respiratory infection 2, afebrile upper tract respiratory infection in 4 and 7 remained entirely asymptomatic. All 27 subsequently showed a four-fold rise in pneumonia antibody titre. Finally the agent was recovered from the pharynx of 21 of 24 of these experimentally inoculated volunteers. Clearly the way was open to investigate the role of mycoplasma in other upper respiratory infections.

It is interesting to note that in Chanock's epidemiological study of recruits at a marine base he isolated PPLO in 68 per cent of 238 men with atypical pneumonia and the infection occurred in six per cent of recruits without respiratory illness. The agent was widely disseminated throughout the training base and infections were found in almost every platoon. By fluorescent antibody studies he found that 44 per cent of recruits were infected at some time during the three months training period. The infection was also associated with respiratory diseases in which pneumonia did not occur. The majority of the infections appeared to be asymptomatic. Thus PPLO was not highly communicable, an attribute which favored its persistence in recruits and added to the puzzle of why manifest illness from PPLO occurs.[5]

It is interesting that members of genus mycoplasma have long been recognized as etiologic agents of certain animal diseases notably bovine pleuropneumonia, contagious agalactia of sheep and goats and respiratory diseases of poultry.[6] Sterility in herds of cattle in England have been attributed to mycoplasma infection of the genital

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d by increased appetite, gain in weight
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ably or adversely by treatment.

Precautions
Before prescribing, the physician should obtain a complete history and perform a complete physical and laboratory examination, including a blood count.

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Side effects
The most common side effects are nausea, edema and drug rash. Infrequently, agranulocytosis, generalized allergic reaction, stomatitis, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug.

Contraindications
These include: edema, hypertension, or danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when other potent chemotherapeutic agents are given concurrently because of the increased possibility of toxic reactions; when the patient cannot be seen regularly; when the patient is senile.

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tract and in fact a mycoplasma has been isolated from the urethral discharge of patients suffering from non-gonoccocal urethritis.

The venereal route of transmission of non-gonoccocal urethritis is supported by the finding that females act as carriers of the T strain of mycoplasma. This observation was reported from a study of urethritis in the Philippines and from a study of females at Camp Lejeune and other centers. Thus far attempts to transmit the infection in laboratory animals have been unsuccessful.

It is not surprising that one should seek these organisms in other diseases such as Reiters syndrome in which urethritis, conjunctivitis and arthritis are the triad of symptoms. If in Reiters syndrome the organism should turn out to be a mycoplasma, then perhaps the arthritis might also be due to the same organism invading connective tissue. A recent report by Bartholomew and Heimes[7] who searched diligently for viruses in Reiters syndrome and connective tissue disease found none, but when they inoculated medium and tissue culture cells from Reiters syndrome they isolated mycoplasma from three out of four specimens. They also isolated mycoplasma from five of six specimens obtained from lupus erythematosus and from five of seven specimens from rheumatoid arthritis.

From now on the etiology of diseases such as Reiter's rheumatoid arthritis and other related diseases of connective tissue will be under continuing surveilance for involvement by the mycoplasma group. Bartholomew's findings may represent the first important breakthrough in the field of rheumatology and diseases of connective tissue in recent years, although they still must be viewed with caution until confirmed.

It is clear that attempts to recover PPLO should be included in any systematic investigation of the presently unexplained segment of human respiratory disease. The growth of this organism on artificial medium has already shown that it is sensitive to demethylchlortetracycline. It should stimulate efforts to prepare inactivated vaccines or better yet, produce an attenuated variant which might be used for immune prophylaxis.

L.H.N.

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Serum Creatine Phosphokinase (SCPK) In Myocardial Infarction

The SGOT test was first introduced in 1954 by LaDue.[1] Since then the study of serum enzymes has played an important role in supporting the clinical diagnosis of myocardial infarction, so much so, that serum enzyme determinations have become virtually routine whether the clinical and electrocardiographic diagnosis is most probable or not. In the former case it offers no special contribution to diagnosis or therapy. In the latter it can be misleading even if positive, because it is well known that the values of SGOT rise also in liver disease and in congestive heart failure both of which may co-exist with acute myocardial infarction. The reason for this becomes obvious when we reflect that the enzyme glutamic oxalacetic transaminase (SGOT) is not one limited to heart cells but is a universal enzyme and is especially prevalent in liver and pancreas whose cells when dying can also liberate this enzyme into the blood.

Many other enzymes have since been studied such as lactic acid (LDH) dehydrogenase. However, the diagnostic value of these enzymes is also limited by the fact that all are present in significant quantities in both heart and liver cells. LDH is also present in red blood cells and can rise significantly in the serum during any period of even slight red cell hemolysis. In addition many other tissues of the body contain large quantities of transaminases and dehydrogenases and when these tissues are also injured the serum enzyme results further compound the diagnostic complexity of a given situation. It is not surprising that in the drive for certainty it has become routine to order repeated estimations of SGOT and LDH regardless of their lack of specificity and how little they really contribute to clinching the diagnosis in most instances of acute myocardial infarction.

It is different, with creatine phosphokinase (CPK), for this enzyme is not present in any significant degree in hepatic tissue or red cells or pancreas, spleen or renal tissue[2] but is abundantly present in skeletal and cardiac muscle cells. It catalyzes the phosphorylation of muscle creatine, a reversible reaction requiring adenosine triphosphate (ATP). CPK is so heavily concentrated in muscle that when necrosis of muscle takes place as in myocardial infarctions, it rises significantly in the serum reaching its maximum in 48 hours and gradually subsiding in 4-7 days. In this respect the findings are comparable to SGOT except for their much higher specificity in myocardial infarction. The determination of serum CPK is of much greater merit because the results cannot be confused with those found in co-existing liver injury.

The only thing a clinician needs to keep in mind in interpreting elevated SCPK values is that any muscle disease will produce abnormal elevations. Thus Ebashi[3] found high levels of SCPK in patients with muscular dystrophy. Others have also found high SCPK values in other disorders affecting muscle tissue such as dermatomyositis, hyperthyroidism, following cardiac surgery, as well as during acute myocardial infarction.[2] However, the diagnostic problems arising during acute myocardial infarction rarely if ever arise from co-existing muscle disease. Instead, they arise if electrocardiographic evidence is lacking[4,5,6] or if bundle branch block obscures signs of acute infarction or if infarction is accompanied by congestive heart failure or if pulmonary embolism must be differentiated or acute pancreatitis.

In each of these differential diagnostic possibilities, an enzyme test that is definitive for muscle necrosis can be an important contribution to the final diagnosis. The reason why SCPK has not hitherto been utilized diagnostically in clinical medicine has been the difficulty of estimating it in the serum with simplicity and exactitude. Now that Hughes technique has been modified and simplified by Dumas and Siegel,[2] its estimation is relatively simple and reproducible and requires but 0.1 ml. of serum and 15-30 minute incubation time for color development. It appears that the serum can be stored at freezing temperatures without loss of activity and that the colorimetric technique is simpler, and as exact as the spectrophotometric method.

Using this method Dumas and Siegal have reported results in 30 patients without myocardial or skeletal muscle disease and 35 patients of which one had pancreatic disease. The SCPK was compared with SGOT. They found that the SCPK is markedly elevated in acute myocardial infarction and is a more useful test than SGOT especially in patients with congestive heart failure. The enzyme activity reaches its maximum in 24-48 hours after the onset of pain and return to normal within 4-7 days. This test should make SGOT and LDH determinations unnecessary and reduce the need for repeated measurements which have developed in part because of the lack of specificity of these enzymes.

Serum enzyme studies developed because of their contributing evidence towards a diagnosis of myocardial infarction. SGOT and LDH have failed to help differentiate between congestive heart failure itself and that caused by myocardial infarction. They have failed to differentiate between pulmonary embolic disease and myocardial infarction because SGOT is elevated in both. They have failed in congestive heart failure when bundle branch block obscures the electrocardiographic diagnosis of myocardial infarction and they have failed in congestive heart failure without positive electrocardiographic evidence of infarction when the necrosis is sub-endocardial since the enzymes are elevated in both.

CPK being an enzyme especially found in cardiac muscle is the enzyme whose rise in the serum is most specific for directing attention to myocardial injury. Its estimation in the serum will probably replace SGOT and LDH in differential diagnosis of myocardial infarction, reduce the number of serum estimations necessary and lift a burden from the already overworked laboratory.

L.H.N.

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Allopurinol In The Treatment Of Gout

There are four major problems in connection with the gouty attack. One is the origin of hyperuricemia. Another is the mechanism of the gouty attack. A third is the nature of the renal disease

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in gout and the fourth is how to control the hyperuricemia which produces both the acute and chronic manifestations of this "ancient and honorable disease."

Today hyperuricemia occupies the center of the stage in the concept of the nature of gout. It appears as though 6.4 mg/100 ml of uric acid in the blood is the point of saturation beyond which manifest gout becomes more probable. In the Framingham study gout was found in less than 2% of males with uric acid levels between 6-6.9 mg/100 ml of blood, whereas the incidence was 36% in males with serum levels of 8 mg/100 ml. The incidence is cumulative being 2% at mean age 34 and 23% at mean age 58. There can be no argument that control of hyperuricemia is a matter of critical importance. Otherwise sodium urate crystals will tend to form and be deposited around joints,[1] and in the kidney tubules[2] and this appears to be true whether the disease is primary or secondary, or whether in any given subject uric acid is being over-produced or under-excreted or both.

Prior to 1950 control of hyperuricemia was unattainable in most subjects and elimination of purines from the diet was ineffectual by itself. It was clear that to obtain relief it was necessary to maintain a serum urate level of less than 7 mg/100 ml if one is to prevent urate crystal deposit in and around joints, if one is to resolve existing tophi and prevent development of new ones from forming. Even now with uricosuric agents and appropriate dietary measures, only two-thirds of gouty patients can be made to function at a urate blood level of 7 mg/100 ml of blood or less.

The most common causes of inadequate control of hyperuricemia are the presence of renal disease sufficient to limit urate excretion, intolerance to uricosuric drugs, and concomitant use of salycilates that interfere with the action of these drugs. Because of continued transit of large quantities of uric acid through renal tissues and tubules, the collecting ducts are plugged by urate sludge and this gives rise to nephrolithiasis and infection. There therefore comes a point in which even if control of serum urate level is achieved, the renal functional impairment becomes largely irreversible. Clearly then if we are to prevent hyperuricemia, it is not enough to strive for excretion of excess urates by the kidney since this becomes increasingly difficult as gout nephropathy gradually develops. We must if possible strike at the source of blood urates by preventing their formation.

It has been shown that the urates in the blood come from xanthines. Hypoxanthine is oxidized to xanthine and this in turn is oxidized to uric acid by the enzyme xanthine oxidase. If an inhibitor of xanthine oxidase could be administered, then the xanthines would not be oxidized to uric acid and the cause of hyperuricemia would be removed.

Allopurinol was first investigated as a xanthine oxidase inhibitor in the therapy of leukemia.[3,4,5] It was designed to reduce the oxidative degradation of 6 thiopurine used in therapy of this disease. Clinical studies at Duke Hospital showed that conversion of 6 thiopurine to 6 thiouric acid was sharply reduced because allopurinol inhibited xanthine oxidase. One would therefore expect that it would also lead to a reduction of serum and urine levels of uric acid and concomitant increase of serum and urine levels of the precursors of uric acid, i.e. hypoxanthine and xanthine. This in fact was then observed and it immediately became apparent that allopurinol was a potentially useful drug in the treatment of gout.

The first clinical report on the use of this compound in gout, hyperuricemia as well as leukemia, appeared early in 1963.[3] Klinenberg, et al. confirmed previous reports on the use of this important new drug that inhibits the production of uric acid and reduces concentration of urates in both serum and urine. Recently Yu and Gutman[4] reported their experience in 41 patients with primary gout and 9 with secondary gout, many of whom were refractory to the conventional forms of therapy. At present Wyngaarden, et al.[5] have treated over 100 patients with allopurinol for various reasons and varying periods of time. Fifty have primary gout of which 40 have been followed in detail from 3-30 months to determine therapeutic effectiveness and possible chronic toxicity. The remaining patients had secondary gout complicating polycythemia, leukemia, glycogen storage disease and uric acid stone formers either hyperuricemic or normouricemic.

In contrast to the difficulty of achieving normal serum urate levels when diet and uricosuric agents are used, virtually all 40 patients with primary gout at Duke Hospital have achieved normal serum urate levels. The doses necessary varied from 200-300 mg/day for patients with mild disease to 400-600 mg for those with moderately severe tophaceous disease. Rarely doses of 700-1000 mg per day have been required. Thus the clinical effects of allopurinol, are dose and time related. Although the incidence of the acute attacks may not change for 3-6 months, thereafter the frequency and severity decline. Resolution of tophi occurs gradually and maintenance of normal serum urate levels is unequivocal even without uricosuric drug therapy. There is a corresponding improvement in functional status. Prevention of urolithiasis has been completely successful in both gouty and non-gouty subjects who formed urate stones.

The concomitant administration of uricosuric agents usually resulted in appreciable increases of urinary acid secretion and a further decline in serum urate levels. By the selection of the appropriate dose of allopurinol together with use of a uricosuric agent in certain patients, it is now possible to reduce the serum urate levels to normal or if desired, to hold it as low as 2-3 mg/100 ml indefinitely unless of course nephropathy is unusually severe and renal function markedly limited. Even then, reduction of serum levels can be achieved with allopurinol and this response may also be made use of to control the acute hyperuricemia that all too often attends the aggressive treatment of acute leukemia wtih antimetabolites or steroids and in this circumstance allopurinol may be lifesaving in averting otherwise fatal renal complications.

Is the body hurt by being unable to convert xanthines to uric acid? Does the resulting increase in the xanthines interfere with their excretion or their utilization to synthesize nucleotides? The answer is unequivocally no to either of these two questions.[6] What allopurinol does is to offset the action of an enzyme which produces a disease. In this way it converts such individuals into more like normal people with respect to uric acid metabolism.

The drug has proved to be remarkably well tolerated. There has thus far been no chronic toxicity of the renal, hepatic, hematopoietic or nervous systems. A few instances of drug reactions with rash and fever have occurred once in Klinenberg's series. Yu and Gutman reported also some gastrointestinal intolerance and at the beginning more attacks of acute gouty arthritis than Wyngaarden, et al. observed in their larger series.

The question unanswered as yet is whether allopurinol, or other exanthine oxidase inhibitors to come, may prevent renovascular and hypertensive complications of gout by reducing the renal transit of uric acid. If chronic oxypurinemia does not have any deleterious effects may it produce some special benefits in some other disease states. It should not be long before the answer to these and other questions will be at hand.

L.H.N.

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Urokinase

There is a high mortality and morbidity caused by intravascular thrombosis. There is therefore a great need for an agent that can dissolve clots that have formed in vivo. Now that we know the nature of the enzymatic system—the plasminogen-plasmin system, capable of in vivo lysis of fibrin, investigators have sought to utilize agents acting upon this system for therapeutic purposes. In this journal there has already been reported readily induced thrombolysis in animals by a mixture of plasminogen plus an activator streptokinase.[1] For various reasons such as pyrogenicity of the preparation and fluidity of the blood, this plasminogen activator was much less than an ideal therapeutic agent, especially in human subjects with intense antigenicity to streptokinase. Clearly if we were to solve the problem of in vivo thrombolysis an activator of human origin might be the ideal one.

Such an activator extracted from the urine of human subjects by Plong and Kjeldgaard in 1957[2] is of peculiar physiological interest because it seemed to be identical with or closely related to the plasminogen activator normally released from tissues and which circulates in plasma under physiological circumstances. The infusion of such an agent could only assume a desirable therapeutic role however if the preparation was pure, was not contaminated with virus particularly the hepatitis virus and if it were non-toxic, non-pyrogenic and if it were not followed by a hypercoagulatable state as has been described after sudden discontinuance of the coumarin type drugs.

The steps in the clarification of urokinase as a therapeutic agents are a model of clinical investigation. It was first tested in rabbits and mice without any obvious signs of toxicity. Fletcher, et al.[3] gave a single dose of fifty thousand units/kg body weight in a rabbit. No significant change was observed in the blood pressure, respiration, pulse rate, or electrocardiogram. To remove the danger of viral infection they heat-treated the material at

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Teichmann and Horvath studying polyoxyethylene formulations of chloranil made the following observations:

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10%	63	39	14	6	4
5%	30	16	10	4	0

*** Denotes resolution of at least 50%.*
** Denotes resolution up to 50%.*

DURATION OF TREATMENT

Number of Cases	14	24	18	14	9	3	7	4
Duration (weeks and months)	2 wks.	1 mo.	2 mos.	3 mos.	4 mos.	5 mos.	6 mos.	8 mos.

The types of psoriasis included (parentheses indicate number of cases); Generalized (31), Palms and soles (7), Legs and feet (18), Scalp and ears (27), Groin (3), Neck (5) and Vulva (2).

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References:
Teichmann, W. O. and Horvath, P. N.: Southern Medical Journal *50*, 1521 (1957).

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60°C for ten hours. Only then were they ready to test out the urokinase in humans.

The patients chosen for study were hospitalized convalescents suffering from a variety of chronic disorders and from acute thromboembolic disease excluding fever and hematologic disorders. A total of thirty-four infusion studies were carried out with varying amounts of urokinase dosage and thrombolytic activity was carefully measured by reliable and well tested techniques. The results were quite clear that if a standard dose of urokinase were infused then a predictable thrombolytic effect could be produced. The higher the urokinase dosage, the greater was the plasma thrombolytic activity and increase in the plasma-thrombin clotting time. They were able to maintain clot lysis at approximately twenty per cent level for thirty hours and presumably longer by the correct urokinase dosage. While there were minor disturbances of the coagulation system, the results gave assurance that pathological hemorrhages are unlikely to complicate therapy.

They did observe local minor hemorrhage in two patients who temporarily oozed for fifteen minutes, one from minute facial cuts during shaving and another from punch skin biopsy previously done. Two other patients developed moderate hematuria as a result of chronic pyelonephritis, but urine cleared within twelve hours after infusion. No subjective symptoms and no pyrexia occurred, no antigenicity developed and neutralizing antibodies were not found against urokinase as was to be expected since it is of human origin.

What is the fate of infused urokinase? The significant thing observed was that regardless of the amount infused, only two to five per cent of the total was excreted in the urine. Nevertheless, following its initial or later infusion, fifty per cent of it disappears in 14 ± 6 minutes. This is approximately equal to what happens to plasminogen activator stimulated by drugs such as nicotinic acid; It would seem as though urokinase possesses the same kind of activity as does the normal plasminogen activator released in vivo. In fact, in vitro studies with highly purified plasminogen activator derived from tissues demonstrates an almost identity of behavior as does urokinase.[4]

The observations to date indicate that urokinase is a highly versatile thrombolytic agent which can be used either to produce the most intense state of plasma thrombolytic activity or if employed in lower dosage can produce moderate states of plasma thrombolytic activity over longer periods. From the standpoint of thrombolytic therapy Fletcher, et al. report one patient with central retinal artery thrombosis in which there was a clear visible restoration of the retinal circulation. If this could be accomplished in coronary artery thrombosis or cerebral artery thrombosis we will have gone a long way towards reducing the mortality and morbidity from thrombolytic episodes.

There are several points of caution however that require mention in this regard. One is that occlusion in a coronary artery is not always due to a clot and until some test is devised to establish the existence of thrombosis at an inapparent site, urokinase therapy will be a shot in the dark. For this reason there will be ernest search for a drug that will reproduce plasminogen activator effects, that will be easy to administer, and be safe and which can be continued long enough so that anticoagulants can be instituted to prevent rethrombosis in patients suffering from thrombosis.

L.H.N.

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The Merrimac River: A Case History In Water Pollution

The Merrimac River falls from an elevation of 4,600 feet in a relatively short distance. Its force is ample to turn heavy water wheels and so we find that the Merrimac towns became the centers of the United States textile industry, though much less so now than formerly. Powering a great industry, the river paid dearly for it. It is now thoroughly polluted and the once great fishing industry is no more. Fish require water with substantial quantities of dissolved oxygen and small plants and animals to feed on. The oxygen readings of the Merrimac are now much below the levels required for species propagation, and its bottom is no longer pebbly but is coated with ooze and sludge which eliminates the fishes' foods. Even the few fish species that survive, bullheads, shiners and suckers, are inedible.

The shellfish industry at the mouth of the Merrimac is gone. Densities of bacteria and viruses of the water are so high that shellfish taken from these waters if eaten raw can cause serious illness. The Massachusetts State Department of Health closed the beds in 1926.

Boating and water skiing are too hazardous on the Merrimac. The untreated municipal sewage which is poured in the Merrimac contains huge quantities of pathogenic organisms causing all kinds of gastro-intestinal, liver, skin and eye, ear, nose and throat infections. The bacterial and viral count is over one million per 100 ml. although only 70 bacteria per million is allowable for shellfish production and 1,000 per 100 ml. for safe water recreation.

Besides bacteria, the swimmer or boater on the Merrimac may come into contact with highly toxic pesticides and other organic chemicals like phenols, toxic wastes from metal plating and chemical industries. Cyanide has been found near the intake of the City of Lowell's water supply.

Having destroyed the fish breeding and recreational potential of the river, pollution is now threatening the usefulness of the river as a source of municipal and industrial water. Detergents, especially in the shallower tributaries, cause sudsy water to run from faucets and this can interfere with industrial processes. The drinking water yellows the laundry, has an objectionable taste, odor and even color. The ammonia in it prevents the chlorine from sterilizing the water. The river itself is opaque, usually black, occasionally gray, milky white or colored depending on the particular variety of industrial wastes. Oil slicks, grease balls, black oozing sludge, slimes, and fecal debris may float by on the top of the stream.

We are approaching the day says Wolf[1] when it would seem dangerous to live near such a river. It is foul during the summer when high temperatures accelerate the rot of organic wastes. The suspended solids settle onto the bottom of the river, bubbling up to the top as if the river was cooking. The gases often contain hydrogen sulphide, which smells like rotten eggs and can cause expensive damage by discoloring the paint on houses and boats. Who now would want to live on the banks of such a river?

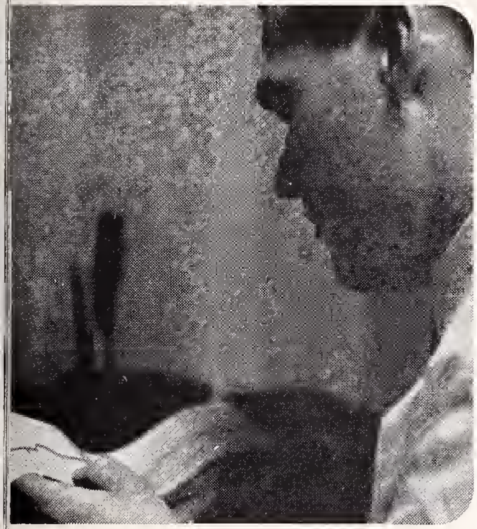
This didn't happen in a day. It has been going on for many decades during which the river provided water power, process water and a free sewer. . . . Even in 1839 when Thoreau and his brother spent a week rowing down the Concord and up the Merrimac the pollution of this stream was already notorious. He wrote "When at length it has escaped from under the last of the factories, it has a level and unmolested passage to the sea, a mere waste water as it were, bearing little with it but its fame." One hundred and twenty-five years later it is much worse. Today Thoreau would not have a desire to spend a week rowing on it, since the many attempts to clean up the Merrimac have so far been unavailing.

What the States have done about it is a lesson in how not to get things done. Beginning in the Nineteenth Century the Department of Public Health of Massachusetts conducted numerous surveys. After many surveys the department "recommended"to cities to treat their waste or build a sewer from Lowell to the ocean. Then there were more recommendations and more surveys. Nothing of course happened because the industries were influential and the legislature and the towns didn't want to spend money.

Then in 1938 a Merrimac River Valley sewerage district and Board was created but without funds for sewerage treatment. The Merrimac pollution was "bemoaned" for 80 years but in 1964 not one town on the main stream of the river treated its wastes. Wolf explains that the reasons are easy to understand. The Massachusetts Health Department had no enforcement powers whatever until 1945. The legislature was dominated by representatives of industries. If industrial executives know how to apply political pressures they need not be too eager to build expensive waste treatment facilities. The legislatures were also subject to pressure from taxpayers unwilling to undertake large expenditures on pollution control. Wolf states that state health officials admitted that they had difficulties persuading their Attorney General to undertake litigation against industrial polluters.

What then is the answer? Only an outcry by the public led by conservationists and civic action groups like the League of Women Voters can be the key to persuading industries that pollution is unpopular and persuading citizens that it is dangerous. A similar outcry against the powerful Pacific Gas and Electric Company's plan to build an atomic reactor in California suceeded in forcing them to abandon this dangerous venture.

Is there a dollar and cents argument in favor of water pollution control as well as an esthetic one, and the danger to the public's health. No one has measured the amount of illness and physical incapacity arising from this hazard, but it must be enormous. There would, on cleaning up the stream, develop a profitable tourist trade and large increase in water recreation facilities. Tasty fresh water fish would return if the water were clean. Land along the river would greatly increase in value. The river would be a source of drinking water which could be used over and over again. A good steady water supply will be attractive to many industries. The use of water for drinking is bound to increase. Ground water supplies will not be adequate for increased demand. Some towns like Lawrence and Methuen are already taking drinking water from the Merrimac, Lowell and Chelmsford are making plans to do so. Doubtless other towns will have to do so in the near future. If Merrimac water is to



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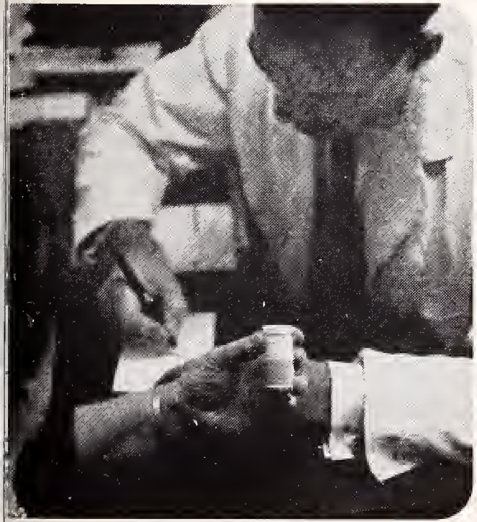

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*Chupkovich, V.; Finnerty, F. A., Jr., and Kakaviatos, N.: The value of chlorthalidone plus reserpine in moderately severe and severe hypertension: A two year study. Presented at the 7th Inter-American Congress of Cardiology, Montreal, June 14–19, 1964.

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be used safely, it will have to be less contaminated than it is today.

The Merrimac is not the only polluted stream, the Ohio, the Delaware, the Susquehanna, the Hudson, the Arkansas, the Housatonic, are but a few among many and this indicates the problem is national in scope and for a successful solution, will require the intervention by the federal government. Federal enforcement finally did come to the Merrimac in 1964, but the outcry against it came from many places that were not concerned with the public welfare but their own economic interest. The complexity of the contending interests and public welfare is excellently portrayed in Wolf's case study of the Merrimac. Those who will struggle to remove pollution from our streams should study this valuable report. They will learn who is against and why.

L.H.N.

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Saving Lives By Resuscitation

Over 500,000 people die every year from heart disease alone. Some of these individuals could be saved if emergency cardio-pulmonary resuscitative maneuvers could be instituted at the instant cardiac and respiratory activity cease. Otherwise the brain is irreparably damaged within four minutes of cardiac standstill and resuscitation though it might start the heart cannot succeed, in saving the patient.[1] Even in hospitals, unless they are geared to immediately institute measures designed to maintain the circulation and respiration in cases of sudden death, the critical period of effective resuscitation is frequently passed and the patient is lost. In the hospital what is needed is a method of alarm to alert nurses, and an immediately available physician to begin cardiopulmonary resuscitation and if necessary defibrillation in a patient who has suddenly lost his heart beat or respiration.

In the field at the location of an accident, the problem is more complicated because of the time element between the occurrence of the accident and utilization of available resuscitative techniques by trained personnel in time to effect a recovery. This requires that the resuscitation be begun promptly and the patient brought rapidly to the hospital where defibrillation and cardiac pacing is also available. Clearly, beginning resuscitative measures at the scene of the accident requires that non physicians well trained in such measures be available on the spot.

With the introduction of closed chest cardiac massage by Jude, Kouwenhoven and Knickerbocker,[2] a new emergency measure became available for the treatment of sudden death which could be taught to non-medical personnel such as nurses, ambulance drivers and first-aid squads who have since clamored for instruction. The hesitancy which understandably arose among physicians and organizations concerned with this procedure to instruct non-professional groups, arose because of the possible dangers encountered with improperly performed cardiac resuscitation. Furthermore even if non-professional personnel were to be allowed to engage in resuscitative procedures it would be necessary for them first to determine the real cardiac status before applying the resuscitative techniques. The degree of possible injury and the benefits to be derived if ambulance drivers and rescue personnel were trained to engage in cardiac resuscitation could only be determined by experiment.

Such an experiment was carried out in Baltimore where, soon after closed chest cardiac massage was begun, ambulance drivers and rescue personnel were taught to carry out this procedure. The results were reported by Wilder et al. in November 1964.[3] The report reviews the results of 153 cardiopulmonary resuscitations, initiated by the ambulance service of the Baltimore City fire departments who were instructed by experts at Johns Hopkins and Baltimore City hospitals in the technique of total cardio-pulmonary resuscitation.

Seventy-three men were given initial three hour courses of didactic lecturing and film viewing followed by an hour of individual instruction on a manikin and an anesthetized dog. In addition they served 32 hours at the emergency room at Baltimore City hospital. Their training was reinforced at six months intervals by lectures, demonstrations and practice on a manikin. Mouth to airway breathing was emphasized rather than use of a mechanical apparatus because the pressure cycling resuscitators are ineffective during the application of external heart compression.

Of the 153 patients dealt with in the field, 101 were pronounced dead in the accident room on admission or after one hour of attempted resuscitation. In many the pupils were fixed and dilated when the ambulance team arrived and the history revealed impossibility of success. Because a lay person cannot legally declare a patient dead, the team began resuscitation efforts in the field and continued until the patient was brought to the hospital. Twenty more patients were treated in the accident room for over one hour before being pronounced dead. Seventeen more patients had electrocardiographic evidence of ventricular fibrillation on admission which were successfully defibrillated in the accident room and a regular sinus rhythm reestablished. However, of these only 7 survived and then only for a short time.

Fifteen patients developed spontaneous respiration and pulse after beginning cardio-respiratory resuscitation either in the ambulance on the way to the hospital or in the accident room. All survived and defibrillation was not necessary. In these, we do not know whether the heart beat was present and ineffective or whether cardiac activity had actually ceased and the resuscitative efforts were responsible for restoring the heart beat. At any event a living person followed cardio-respiratory resuscitation and none suffered any ill effects from the closed chest cardiac compression. Although there was some soreness around the sternum, none suffered obvious rib fractures and all did well. We cannot help but suspect that the resuscitative efforts were not crucial because the time lag from the receipt of the call to the arrival at the scene of the accident was over seven minutes certainly enough to produce a dead brain in a patient whose heart had really stopped.

The investigators did have a chance to study post-mortem 42 of the 138 patients who died. In none was there a ruptured viscus either in the abdomen or chest. Five showed bilateral rib fractures but no lung damage. Petechiae were common on the pericardium, a rather insignificant finding. In short one fact is outstanding: no fatal injuries were produced by trained personnel and the 15 patients who survived, suffered no ill effects. Clearly the resuscitation techniques used by the trained ambulance personnel were observed adequately to maintain respiration and circulation.

In all resuscitation time is obviously of the essence and the opportunity for successful resuscitation is lost in many instances as evidenced by the recorded time between the receipt of the call and the arrival of the ambulance at the scene of the emergency. If more individuals are to be saved from heart attacks, drowning and other forms of sudden death it will be necessary to train not only ambulance and rescue crews but also all who are interested in these emergency measures. In addition hospitals also have to be prepared for resuscitation and external defibrillators must be available even though the use of defibrillators in the study mentioned above produced no living patient.

L.H.N.

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The Computer In Diagnosis And Treatment

If we should ask ourselves how do we make a medical diagnosis, we suddenly discover that it is an inherently complicated process. First we obtain the "facts" from the patients' history and physical examination. Then we seek certain special laboratory data. Then we evaluate the importance of the different signs and symptoms recognizing some as very important, others less so. Then we attempt to make a differential diagnosis. We think of or list the diseases which the specific case can reasonably resemble. Then we exclude one disease after another from the list until it becomes apparent that the case can be fitted into a definite disease category or it may be one of several possible diseases or else its exact nature cannot be determined. Or perhaps it could if we knew what else to think of and what additional information could be relevant to furnish an answer.

Even this is a greatly simplified explanation of the process of diagnosis that goes on in the physician's mind. Sometimes after seeing the patient we develop a "feeling" about the case. This feeling is very hard to explain but it may be a summation of many impressions concerning the way the data fit together, the patient's reliability, his facial expression, general appearance. Without doubt such thoughts do influence the considered diagnosis. No one can doubt, once thinking about it, that complex reasoning processes are involved in making a medical diagnosis. The physician's need to make a diagnosis is important because it helps him to choose the optimum therapy, a decision which in itself demands another complex reasoning process.

It is widely believed that errors in differential diagnosis result more frequently from error of omission than from any other source. From our own experience we know the most brilliant diagnostician is the one who remembers and considers the most possibilities. If we were also able to do this we would not suffer from the incompleteness that may prevent correct medical diagnosis. We could all become brilliant diagnosticians.

It so happens that a medical diagnosis involves processes which can be systematically analyzed. Systematization of the reasoning processes can enable the physician to define more clearly the intangibles involved. The reasoning processes are susceptible to precise analysis so that errors of reasoning can be eliminated. To do this it appears that two well-known mathematical disciplines, symbolic logic and probability theory, can contribute to the understanding of the reasoning foundations of medical diagnosis. A third mathematical discipline, value theory, can aid in the choice of an optimum treatment.

The logical concepts inherent in medical diagnosis emphasize the fundamental importance of considering combinations of symptoms or symptom complexes in conjunction with combinations of diseases or disease complexes. The end-result of the diagnostic process usually gives a "most likely" diagnosis from the alternative possible disease complexes the patient can have in accordance with the laws of probability.

Once the physician has made the diagnosis his problem is to choose the treatment which will maximize the chance for curing the patient under the ethical, social, economic and moral constraints of our society. Here value judgment come in and again value theory concepts can contribute to the understanding of the reasoning involved in the choice of a therapy.

Once diagnosis is broken down into its basic elements, symptom combinations in relation to diseases complexes, it becomes possible to calculate the probabilities that a patient with a group of symptoms has a particular disease. Information in this regard is not yet available for many diseases, but it would appear that the relatively explicit fields of hematology and congenital and acquired heart disease are ready for analysis and the results fed into a computer.

Computers seem to be especially suited to help the physician collect and process clinical information and remind him of diagnoses he may have overlooked. Obviously, carefully evaluated or definitely verified diagnoses should be used in feeding into the computer, otherwise errors can be perpetuated. Furthermore, there will have to be provision made for review and removal of incorrect diagnoses as our medical knowledge grows. At present there is a paucity of proper statistical and mathematical techniques for analyzing data collected so that they will yield the relevant information sought by the physician. The biomathematician is available and ready, so is the engineer, but the physician alone must define the problems to be solved and what must be measured and fed into the computer.

The physician will need specialized training in using the computer as well as communicating to the mathematician and engineer his knowledge so that he can control and regularly receive the data processing results. There will be constant changes in computer technology that will seriously tax the physician's capabilities to adapt to these changes. As the computers become more complex, so will failures of the device become more frequent. Complex computer systems built with delicate electronic parts and merged with electromechanical devices have special vulnerability. And who will take the rap if an electronic failure leads to jeopardy of the patient's survival.

There are other problems, for example the legal one as to who is responsible for errors in processing. Can confidential data be disseminated in an uncontrolled fashion? What constitutes a legal document for potential use as exhibit material in a court proceeding? Some of the data is likely to be fed into the computer without written proof of human intervention. How can one attest to its accuracy?

Current medical computing research is grappling with most of the problems outlined.[1,2] Much more, however, needs to be known, as for example, to account for the individuality of each patient's course from disease or injury to recovery. This clearly is no time for misplaced enthusiasm. For the present what has taken place in computer research in medical diagnosis has already sharpened our logic in diagnosis, has given us insight into the reasoning processes that lead to the diagnosis.[3,4] It may be expected that the computer, properly programmed for diagnosis in any field will sharpen the teaching of differential diagnosis to students.

The fear at times expressed that the computer will take over the physician's duties is misdirected to the wrong point. Far from the computer taking over the physicians' duties, the physician will have to learn more about symbolic logic, the laws of probability and value theory, in addition to the knowledge he presently needs and uses, in order to programme the computer properly. Without this, the computer can give irrelevant information, for the computer does not think, it stores the information put in by the physician and sorts facts to help thinking men solve problems.

A thinking physician must put in the correct information into the computer and only a thinking doctor will be able to use what comes out. Thus the physician will gain in ability to make a more precise diagnosis and arrive at a scientific determination of the treatment plan.

L.H.N.

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DYRENIUM — A NEW ORAL DIURETIC AGENT

Triamterene (Dyrenium—SKF) belongs to a new class of oral diuretic agents, the pteridines. Unlike spironolactone (Aldactone A—Searle), it is not a steriod; nevertheless, it has some of the characteristics of an aldosterone antagonist. It produces a modest water and sodium diuresis in patients with fluid retention due to congestive heart failure, cirrhosis of the liver, and the nephrotic syndrome (J. H. Laragh, *et al.,* Fed. Proc., 20:410, 1961), but maximum diuresis is less than with the thiazides.

Experience with triamterence in patients refractory to mercurial and oral diuretics differs. Some investigators report good results with the drug; others do not. When it is used in combination with a thiazide or mercurial diuretic or with spironolactone, however, there is often an additive diuretoc effect.

Potassium Balance—Unlike the thiazides and the phthalimidine diuretic, chlorthalidone (Hygroton —Geigy), triamterene does not promote potassium excretion. Like spironolactone, triamterene may, in fact, decrease potassium excretion enough to cause hyperkalemia in an occasional patient. And like spironolactone, triamterene can sometimes be used to advantage in combination with a thiazide to treat refractory edema and, at the same time, to prevent hypokalemia. In a study of patients with liver cirrhosis and ascites by D. J. Ginsberg *et al.* (New Eng. J. Med., 271:1229, Dec. 10, 1964), triamterene was about as effective as orally administered supplements of potassium salts in controling such untoward effects of thiazides as hypokalemia and alkalosis.

Side Effects—The continued use of triamterene produces an elevation in blood-urea nitrogen (BUN) in many patients with or without underlying renal disease. This effect appears to be reversible when therapy is discontinued or when the dosage is diminished. Periodic BUN as well as serum potassium determinations should, however, be made, even in the absence of renal disease. There has thus far been no evidence of damage to liver function. Several instances of reversible leukopenia have been reported. The manufacturer warns that triamterene is contraindicated in renal insufficiency and in hepatitis. Unlike the thiazides, triamterene has not been reported to precipitate diabetes or cause uric acid retention or gout. Some patients complain of nausea and vomiting with triamterene, symptoms which should be less frequent if the drug is taken after meals. Headache, dizziness, weakness and diarrhea have also been reported occasionally. Other side effects may, of course, appear with longer experience.

Pregnancy And The Fetus — The manufacturer states that triamterene has been used in over 300 pregnant women with no evidence of untoward effect on the fetus; nevertheless, it would be prudent not to give this or any other diuretic in pregnancy unless dietary and other measures are ineffective in controlling edema and toxemia.

Dosage—The usual adult starting dose is one capsule (100 mg.)twice daily after meals. Maintenance therapy should be adjusted to 100 mg. daily or every other day, depending on clinical response. The peak effect occurs two to eight hours after administration, and effects persist for about 16 hours following a single dose. Most patients respond during the first day of treatment, but the maximum response may not occur for several days.

Triamterene has been found to exert a mild hypotensive effect in some patients with essential hypertension or hypertension of renal origin. The effect is not consistent, however, and the use of the drug as the sole hypotensive agent is not recommended. One of the main uses of the thiazides is in supplementing the action of sympatholytic and other hypotensive agents. If triamterene, like spironolactone, proves similarly effective as an adjunct to other drugs in antihypertensive therapy, it will be useful in hypertensive patients who are diabetic or who have gout, and who therefore cannot take thiazides.

In summary, although the drug is modestly effective in the treatment of fluid retention of cardiac, hepatic and renal origin, the main role of triamterene at present appears to be as an adjunct to long-term thiazide treatment to improve diuresis and to prevent excessive potassium loss. Although spironolactone is more expensive than triamterene, it is the first choice for such purposes, since it does not cause an increase in BUN and, in general, has fewer side effects. The combination of a thiazide, spironolactone and triamterene can be used in refractory edematous states.

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Surgery Of Occlusive Disease Of The Extracranial Cerebral Arteries

Charles Rob, M.D.

■ In his textbook written in 1888 Gowers described the clinical picture of thrombosis of the internal carotid artery. In 1914 Ramsay Hunt stressed the importance of occlusive disease of the extracranial cerebral arteries as a cause of apoplectic stroke. But, the discovery of the true incidence and importance of occlusions of these arteries had to await the modern introduction of arteriography. In this connection the report of Hutchinson and Yates (1957) is of great interest. They studied 100 patients who were admitted to a general hospital with a clinical diagnosis of cerebral thrombosis, all these patients died and each was subjected to a detailed autopsy examination with particular reference to the extracranial cerebral arteries. As Table I shows in only 14 of these patients was there a thrombosis of an intracranial artery and in six of these the intracranial thrombosis was an extension of an extracranial occlusion. On the other hand in 58 patients there was significant disease of one or more of the extracranial cerebral arteries. This means that it is now known that an extracranial artery occlusion is a much more frequent cause of cerebral thrombosis than used to be thought. It is also of importance that in no less than 28 of these patients the admission diagnosis was wrong. All the patients had a stroke, but in these patients the cause was not a cerebral thrombosis, the most usual alterative lesion being a cerebral hemorrhage or tumor.

The lesions in the extracranial arteries are frequently multiple, but they are also well localized to contain clearly defined sites. The first is at the bifurcation of the common carotid artery. Here the plaque of atheroma spreads up the internal carotoid artery for a distance of one to two centimeters, but beyond this the vessel wall remains surprisingly normal. The second is at the origin of the vertebral artery from the subclavian and again the distal part of the vertebral artery may be almost free from disease. The third is at the origins of the innominate, carotid and subclavian arteries from the aortic arch; this is the aortic arch syndrome which may result in ischaemic symptoms in the upper limbs as well as of the brain.

From the surgeon's point of view it is of great importance to distinguish between a complete thrombosis and a stenosis of these vessels as a cause of the patient's symptoms. The reason is that in nearly every case of internal carotid stenosis and most cases of vertebral stenosis a good arterial flow can be established; but when these vessels have become totally occluded by a thrombus it is only possible to restore a good flow in the short interval before the clot has spread up into the distal part of these and becomes adherent so that it becomes impossible for the surgeon to extract the thrombus. An exception to this occurs when the occlusion is in the great vessels arising from the aortic arch. In these patients the patent distal vessels are easily accessible to the surgeon and a good flow can be established long after a complete thrombosis.

Table II lists the results which we have obtained with a series of patients operated upon since 1954 with either stenosis or thrombosis of the internal

TABLE I
100 Patients died—Diagnosis, Cerebral Thrombosis.
Detailed Autopsy. (Hutchinson)

Complete Thrombosis, Intracranial Artery (of these an extension from an Extracranial Thrombosis)	14	
Significant Disease of Extracranial Cerebral Artery	58	
Carotid Only		18
Vertebral Only		7
Carotid and Vertebral		33
Wrong Diagnosis	28	
(Mistakes included cerebral hemorrhage and tumor)		

TABLE II
RESULTS OF INTERNAL CAROTID ARTERIAL RECONSTRUCTION IN 546 PATIENTS

			POSTOPERATIVE COURSE			
TYPE OF STROKE	PATIENTS	GOOD FLOW ESTABLISHED	ASYMPTOMATIC	OBJECTIVELY BETTER	WORSE OR NO CHANGE	DIED
Transient	380	366	253	79	44	3
Progressive	82	42	22	17	31	11
Completed	84	46	21	35	23	5

Presented before the Clinical Congress of the Connecticut State Medical Society and the Yale University School of Medicine on September 25, 1964.

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carotid arteries. As will be seen, these patients have been placed into three clinical categories. Those with transient or incipient strokes, those with progressing strokes and those with complete strokes. Experience has shown that the majority of patients with transient or incipient strokes have an arterial stenosis as the cause and that an arterial thrombosis is usually present when the stroke is completed or progressing. This explains the preponderance of patients in our surgical series with transient attacks because in these patients arterial reconstruction is usually successful.

In this connection it is of importance to stress that many patients with transient attacks have no detectable neurological abnormality at the time of operation. Therefore surgery in such patients is essentially a prophylactic procedure designed to prevent the occurrance of further attacks or the development of a major catastrophic hemiplegia. Some years ago we studied 100 patients who had a major hemiplagia, by questioning them or their relatives we were able to establish that in over 60 per cent there was a history of previous transient attacks in the area which eventually became paralyzed.

The symptoms produced by occlusive disease of the extracranial portion of the carotid arteries have been listed in Table III. The most frequent are motor, but a large variety of other symptoms can occur and there is considerable overlap between those produced by carotid and those produced by vertebral-basilar arterial disease. In our experience the classical picture of carotid arterial stenosis with transient loss of vision in one eye and loss of the use of the opposite arm and leg is uncommon.

On clinical examination the presence of a bruit in the neck over the carotid bifurcation or over the vertebral origin from the subclavian artery are in our view useful findings. Such a bruit usually indicated the presence of an arterial stenosis and its presence is therefore a useful screening test to aid the selection of patients for further study. The question is often raised as to the management of patients with an asymptomatic carotid bruit noted during a routine physical examination. In our view such a bruit should be noted, but no further action taken unless symptoms develop or the patient has to undergo some other major surgical procedure which might result in a fall in blood pressure.

TABLE III
PRESENTATION IN 200 PATIENTS WITH OCCLUSION OF THE INTERNAL CAROTID ARTERY

Motor Symptoms		171
Upper and Lower Limb	111	
Upper Limb only	47	
Lower Limb only	11	
Sensory Symptoms		91
Speech Difficulties		44
Visual Disturbances		41
Loss of Consciousness		32
Headache		30
Vomiting		14
Bruit heard by patient		10
Deafness		9
Severe Mental Changes		9
Convulsions		8
Dysphagia		6
Tenderness in the Neck		2
Respiratory Difficulties		2

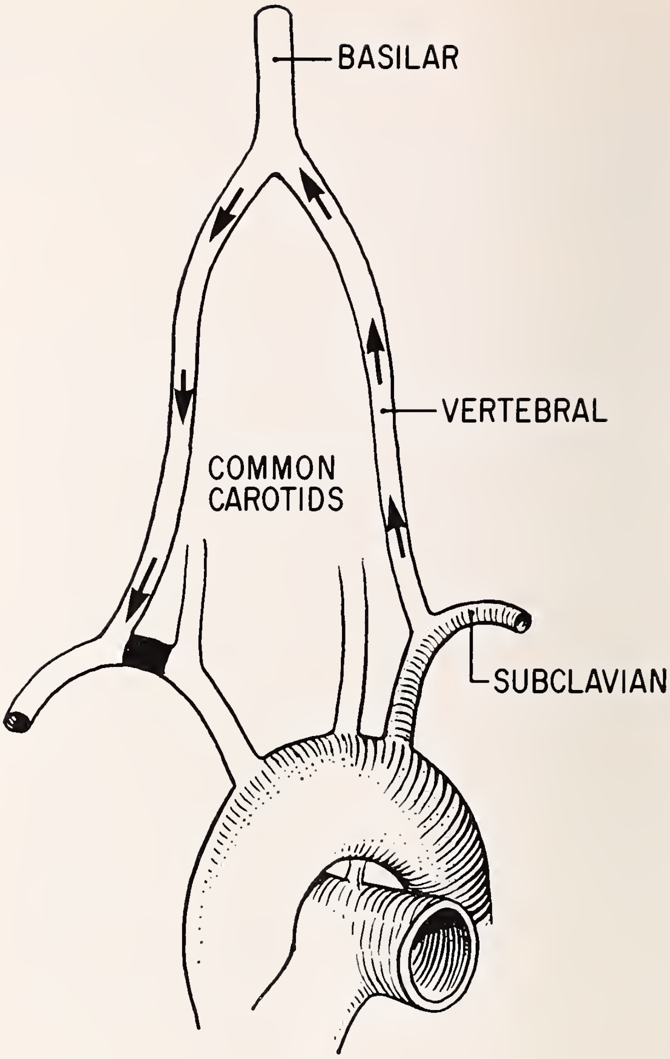

FIGURE I
Diagram to show the mechanism of the subclavian steal syndrome.

The management of patients with complete thrombosis of the internal carotid artery presents different problems. Here a completed or a progressing stroke is the rule. In our hands the results of surgery in patients with carotid thrombosis and progressing strokes have been unsatisfactory and we rarely advise operation in these patients. In patients with a completed stroke surgery may help

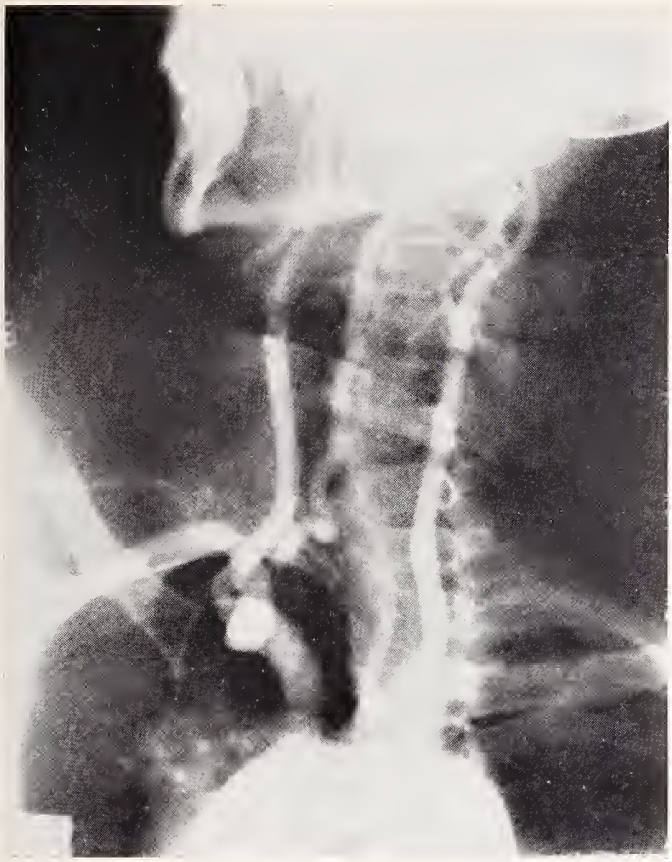

Figure II

The subclavian steal. This arteriogram shows filling of both carotid and the right vertebral artery. The left vertebral artery has not filled.

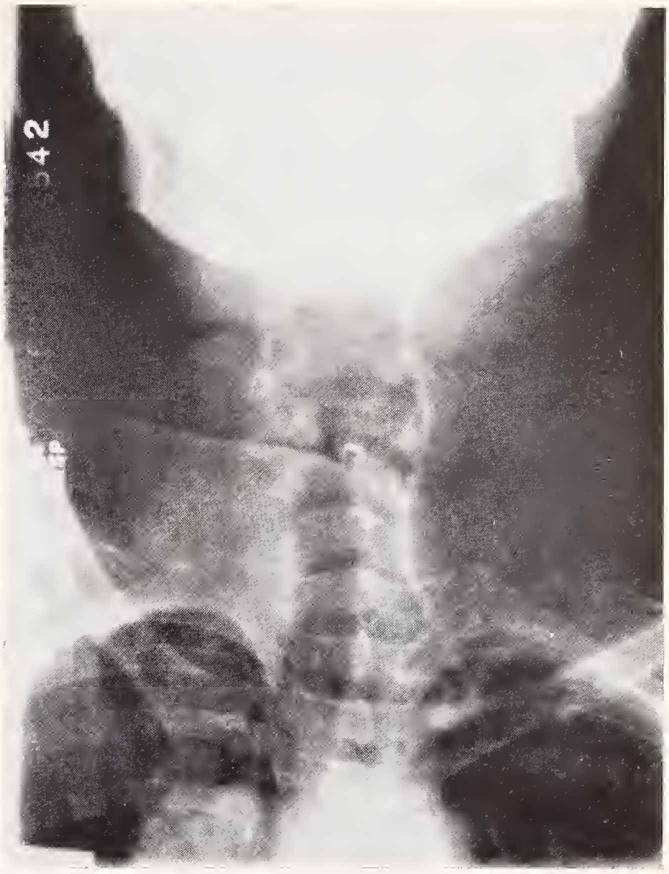

Figure III

The subclavian steal. The left vertebral artery of the patient shown in Figure II has filled from above. Note the occlusion of the first part of the left subclavian artery.

as long as it is possible to extract the thrombus and restore a blood flow. In such patients early surgery is preferred, but good results can follow operation performed weeks later. This is, however, unusual.

The vertebral-basilar system presents several very interesting problems when one or more of the arteries become occluded. The clinical picture of basilar arterial insufficiency may be caused by occlusion of one or both vertebral arteries. When this occlusion occurs at the point of origin of the vertebral artery from the subclavian artery the lesion is accessible to surgery. As Table IV shows, we have operated on 71 patients with a lesion of this type or of the adjacent subclavian artery and as has been the case with the carotid artery, the results have been much better if the operation is performed at the stage of arterial stenosis than if operation is delayed until a complete thrombosis has developed.

Table IV

Results of Arterial Reconstruction in 71 Patients with Occlusion of the Vertebral Subclavian Artery

			Postoperative Course			
Type of Occlusion	Patients	Good Flow Established	Asymptomatic	Objectively Better	Worse or No Change	Died
Stenosis	53	50	31	9	10	3
Thrombosis	18	14	8	6	3	1

In this region the steal syndromes are of special interest. Figure I is a diagram to show the mechanism of the subclavian steal syndrome. The essential point is that occlusion of the subclavian artery proximal to the origin of the vertebral artery produces a low pressure system in the distal subclavian artery, this makes it possible for blood to pass down that vertebral artery and into the arm. The result is that under certain circumstances it is possible for so much blood to be withdrawn in this way from the basilar artery that cerebral symptoms develop. The classical symptoms develop during exercise of the arm supplied by the occluded subclavian artery; the vertebral artery acts as a collateral vessel supplying blood to the exercision are muscles. Figures II and III are arteriograms showing the subclavian steal in operation in a patient with thrombosis of the first part of the left subclavian artery.

The Aortic Arch Syndrome consists of occlusions of the innominate, common carotid and subclavian arteries as they arise from the aortic arch. The usual cause is atherosclerosis, but occasionally this syndrome occurs in younger patients and may then be due to arteritis. The patient suffers from symptoms of ischaemia of both the upper limbs and the head. Surprisingly even when all of the major branches of the aortic arch are occluded there may be no central nervous system deficit; but correction of the abnormality relieves many other symptoms, the most disabling of which is that these patients frequently faint if they stand up quickly.

The indications for surgery in patients with occlusive disease of the extracranial cerebral arteries may be summarized under the following five (5) headings:

1. Arterial reconstruction is recommended if the patient has a correctable lesion of one or more of tne great vessels arising from the aortic arch.

2. Arterial reconstruction is also recommended for patients who suffer from transient attacks due to correctable lesions of the extracranial cerebral arteries.

3. Some patients with completed strokes due to correctable lesions of the extracranial cerebral arteries are advised to have an arterial reconstruction operation.

4. Arterial reconstruction is not recommended for an asymptomatic arterial stenosis unless major surgery is planned for another lesion.

5. The result of operation in patients with progressing strokes have been so poor that surgery is not recommended.

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Amyl Nitrite And Angina Pectoris

Many years ago (1867) when I was a resident physician, I had a case of angina pectoris under my care. I used to go at all hours of the day and night and take tracings of the man's pulse. I found that during the attack of angina pectoris the pulse became very hard indeed, and the oscillations became very small. He had a certain amount of aortic regurgitation, and his normal pulse was very large. As the man's pain came on, the pulse became smaller and quicker and when the pain was excessive the pulse became very rapid, but hardly perceptible. Now, it is almost impossible to explain such a change in the pulse as we have here without assuming that the peripheral arterioles had become enormously contracted. It therefore occurred to me that if one were able to dilate the arterioles the man's pain ought to subside. I knew that the nitrite of amyl had the effect of dilating the vessels, and I tried it, with the result that no sooner had the flushing of the face occurred, and the vessels begun to dilate, then the pain disappeared. Since that time nitrite of amyl has become recognized as a regular remedy for the paroxysms of angina pectoris.—T. L. Brunton. *Lectures on the Actions of Medicines.* New York, The Macmillan Company, 1897.

A Case Of Primary Papillary Adenocarcinoma Of The Fallopian Tube

Mark Solomkin, M.D., Charles Polivy, M.D. and Stanley W. Edelstein, M.D.

■ Primary carcinoma of the fallopian tube is a rare and, unfortunately, a difficult problem in diagnosis and treatment. Because of its rarity,[1] it has been stressed by some authors[2] that all cases of primary malignancy of the tube be reported.

The present case is one of a forty-four year gravida II para I abortus I. The patient was admitted to the surgical service with a diagnosis of an incarcerated umbilical hernia. The patient had had a known reducible umbilical hernia for approximately six months. Two days prior to admission she had a bout of umbilical pain and a fixed irreducible mass but no nausea or vomiting. Her bowel movements continued to be regular. As the patient was "menstruating" no pelvic examination was done. Pelvic examination two and one half months prior to surgery the uterus was found to be small, smooth, freely movable and not tender. The adnexa were palpated and were within normal limits. Laboratory data obtained prior to surgery showed urine and blood counts to be within normal limits. The surgeon began his repair through a transumbilical incision. The hernial mass was found to be incarcerated omentum. On entering the abdomen he encountered considerable serosanguineous fluid and noted a tumor mass involving the left tube. Gynecologic consultation was immediately requested. The mass as it appeared in the pelvis was within the fallopian tube with the widest portion protruding from the fimbriated end. The protruding tissue was red pink, not unlike placental tissue. The only other untoward finding at this time was scattered tiny white nodules on the ovary and the omentum. As frozen section was unavailable due to the time of the surgery and in view of the patient's status—she was an infertility problem—it was elected to do a simple salpingo-oophorectomy through the transverse incision at the umbilicus and await tissue diagnosis. The pathologist report concerning the tube and ovary was:

"B. Specimen is a resected tube and ovary. The tube is 13 x 5 cm. in size and shows progressive enlargement as the distal end is approached. The distal portion of it has formed a modular pinkish-white solid mass, and on section the distal ¾ of the tube is filled with similar tissue, namely, soft yellowish-white tissue with areas of hemorrhage. Except for the distal end of the specimen, the serosa of the tube is intact. Some of the tissue, especially the middle of the tube, is easily removed from the lining of the dilated tube, and the lining is smooth and glistening. This apparently represents a polypoid growth of the mass dilating the lumen of the tube. The ovary is 3½ x 2 cm. in size, and it contains a 1 x ½ cm. hemorrhagic cyst.

Micro: Five sections of tumor tissue of fallopian tube reveal a papillary adenocarcinoma with large areas of necrosis and hemorrhage. Most of the tissue also has a somewhat disorganized appearance with its artifact due to too long a period of time prior to fixation of the specimen. Nevertheless, the papillary pattern of the tumor is distinct, and in addition there are areas in which neoplastic glands lined by columnar epithelium are present. The papillary formation is rather bizarre, and irregular amounts of connective tissue stroma are interspersed. The tumor cells are of the columnar cell variety with a moderate degree of pleomorphism, and frequent mitoses. Section taken from the proximal or smaller portion of the tube as well as from the ovary show the surface covered by diffuse neoplastic implants in which some of the cells also are undergoing mitosis. The lumen of the tube in this location is filled with blood. The ovary contains multiple corpora albicantes, one of which is cystic and slightly hemorrhagic.

Diagnosis: Papillary carcinoma of fallopian tube. (787-0891) Tumor implants on surface of tube, (787-800.9) and on surface of ovary. (788-800.9).

Following the definite diagnosis of "1. Papillary Carcinoma of fallopian tube. 2. Tumor implants on surface of ovary", the question of definitive therapy was faced. In view of the poor prognosis associated with surgery (total abdominal hysterectomy and bilateral salpingo-oophorectomy) with this lesion and with the apparent intra-abdominal spread denoted by the tumor implants on the surface of the tube and ovary and the presence of serosanguineous fluid, it was decided not to subject the patient to surgery and to make use of radiation and chemotherapy. Accordingly she received intravenous Thio-Tepa over a period of four days. The total dose given was 1 mgm. of drug per kilo of body weight. She then received "an abdominal bath of cobalt therapy". The pelvis received a tumor dose

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of 4000 r and upper abdomen received 3050 r, each through a 14 x 17 cm. portal using complete rotation. Total elapsed time for radiation was 60 days. This was followed by a course of radium. The radium was applied by an intracervical tandem containing 50 mgm. of radium. It was estimated that the patient received a dose of 5,900 r to Point A.

Since the therapy, the patient has been followed for almost five years. There has been no evidence of reoccurence or spread. Her pelvic findings are within normal limits except for some atrophy of the vagina.

Comment

Because it is a rare clinical entity and has such a high degree of malignancy no relatively successful uniform mode of therapy based on extensive experience has been evolved for primary carcinoma of the fallopian tube. The present case is reported in order that someday a sufficiently large series may be collected and evaluated.

Summary

A case of primary adenocarcinoma of the fallopian tube is reported. The disease was treated with simple excision of its primary site followed by the use of cancerocidal chemotherapy and radiation in the form of Cobalt bath and intra-uterine radiation. There is no evidence of recurrence five years after therapy.

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The Observational Method In Clinical Medicine

In order that observation should have its proper value certain principles must be thoroughly familiar. The true nature of the method must be understood, its special liabilities to fallacy must be known, and its weakness of trusting to intuition when actual proof is possible, overcome. There can be little doubt that it is this last-named characteristic of ordinary clinical practice that inclines the critics of the observational method in medicine to view it with so little charity or hope. In clinical work proof is usually difficult to obtain, often tedious and unencouraging to attempt, and not rarely altogether impossible; at the same time any effort towards it is constantly overshadowed by the urgency to act. It is natural, therefore, for the expert clinician to rely on his intuition and judgment even when actual and final proof is possible, though this preference does constitute a reproach to the method from any scientific point of view. If clinical observation is to renew its prestige and to continue its indispensable function of stimulating the experimental attack on medical problems, it can do so by showing resolution in looking for proof wherever proof is possible, and a scientific standard in its scrutiny of evidence.—*The Collected Papers of Wilfred Trotter, F.R.S.,* London, Oxford University Press, 1946, p. 124.

The Use And Abuse Of Nitrogen Mustard

Richard M. Klein, M.D. and Carl F. von Essen, M.D.

■ Methyl-bis(beta-chorethyl)amine-HCL (mechlorethamine, HN2 or nitrogen mustard) was demonstrated to be a potent anti-cancer agent by Goodman, Gilman, Lindskog, and Dougherty at the initial clinical trial performed in 1942.[1,2] Despite 22 years of widespread clinical use, however, sequelae related to the methods of application of HN2 are often observed. The purpose of this note is to emphasize some of the common pitfalls in the technique of administration.

A unique feature of HN2 as contrasted to the great majority of injectable drugs is the rapidity of its action on tissues. The effective half-life is estimated to be less than eight minutes *in vivo* and a few hours in aqueous solution[3,4] The mode of application of HN2 is determined by this reactivity and thus differs from techniques of administration involving the longer-lived anti-cancer agents.

Case 1

This patient with disseminated reticulum cell sarcoma and recurrent thoracic and abdominal ascites was scheduled to receive a second course of intravenous HN2. The drug was dissolved into 500 cc of normal saline late in the afternoon by a physician in preparation for administration three hours later. This time lapse was noted by another physician and freshly prepared HN2 was instead injected into the tubing of a rapidly flowing intravenous set.

Comment

Nitrogen mustard is unstable in solution. The currently accepted practice is to minimize the interval occurring between hydration of the drug and injection.

Case 2

A 21 year old garage mechanic with disseminated Hodgkin's disease was scheduled to receive HN2. During the course of intravenous administration an unknown amount infiltrated into the soft tissues of the arm. The next morning the patient's arm was described as "tense, warm and very painful". Warm compresses to the arm and analgesics were given. Two weeks later the patient was unable to extend his arm at the elbow. Hypesthesia of the entire forearm to the wrist was present. A vesicular and ulcerated eruption was present in the antecubital fossa. Physical therapy during the next several months aided in restoring the arm to a full range of motion with a return of sensation. However, the patient self-medicated the ulcer with anti-pruritic medications including poison ivy preparations. Five months after the initial insult, a severe denuded eczematous dermatitis was seen to extend over the entire antecubital area. The dorsum of the wrist was insensitive to pinprick. The entire trunk and right arm, as well as the lower extremities were involved with a fine erythematous scaling eruption. The diagnosis of dermatitis medicamentosum with secondary autosensitization was made. Despite the application of corticoids and antihistamines the rash persisted for one year. The full use of the arm was finally regained two years after the original mishap. The patient is now fully functional and the symptoms of Hodgkin's disease are controlled with vinblastine.

Comment

This illustrates one of the common hazards of the intravenous route required for the systemic administration of HN2. Even when administered cautiously and correctly, extraveasation may occur. In this case, no attempt was made to ameliorate the devastating effects of the drug in the subcutaneous tissue. Both Goodman and Gilman's text[5] and the drug company brochure[6] advise immediate infiltration of the area with 1/6 molar isotonic sodium thiosulfate. The thiosulfate provides an ion which reacts rapidly with nitrogen mustard and thereby protects tissue constituents. If thiosulfate is not available, isotonic saline may be injected locally to dilute the solution. Ice compresses should then be applied to the area for 6 to 12 hours.

Case 3

This was the first admission of a 54 year old glazier who had noted a swollen face for two months. He had developed a brassy cough, weakening voice and pain upon abduction of the right arm. Physical findings included facial swelling and dilated veins over the chest and right arm. The venous pressure measurement in a right antecubital vein was 400 mm of saline. A venous pressure measurement in the left arm was not attempted. A chest x-ray revealed a large right upper lobe mass.

A solution containing 22.5 milligrams of HN2 was injected intravenously into a right antecubital vein. The next day the facial swelling was noted to have decreased markedly but the veins in the right arm and chest were hot, tender, and firm. This phlebitis persisted for 3 weeks and may have contributed to the patients death from vena caval thrombosis. A relatively small volume of tumor was found at autopsy.

Case 4

A 62 year old widow presented with swelling of the face and hands for 2 weeks. On admission she was markedly dyspneic and cyanotic. The venous pressure in the right arm

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was 190 mm saline. A superior venacavagram revealed distortion of the right axillary vein and displacement of the superior vena cava by an extrinsic mass, presumed to be Hodgkin's disease. The patient received HN2 into the left arm with much subsequent relief of her symptoms. Two weeks later, however, she was readmitted with venous distention and cyanosis of both arms. Again HN2 was given into the left arm. The next day a severe and painful phlebitis was noted involving the veins of the left arm and left chest. The left arm was extremely swollen and tense.

Comment

HN2 should be injected into a non-obstructed vein. This will lessen the chances of phlebitis and thrombosis by allowing the drug to circulate rather than remain in contact with the intima of the vein for a longer period of time. There is, of course, no benefit from injecting the drug into the obstructed vein because tumor tissue is supplied by arterial circulation. When both upper extremities have a high degree of venous obstruction as was found in Case 4, injection should be made into a vein in the lower extremities.

Discussion And Conclusions

Some of the initial caution in the administration of this commonly used highly reactive alkylating agent appears to have diminished in recent years. An accepted technique is to inject a freshly prepared solution of the drug into the tubing of a rapidly flowing intravenous set. The treatment of extravasation should be prompt and vigorous. In cases with venous obstruction, injection should be made into a non-obstructed vein.

Acknowledgement

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Scientific Reasoning

Above all, it is essentially requisite that the physician should learn the art of reasoning; or that facility of distinguishing or rightly classing ideas, which most necessarily flow from the habitual application of the mental faculties to various branches of science, and which he, who has been merely occupied with what is called the practice of the profession, can rarely hope to possess.—Preface. *Collections from the Unpublished Medical Writings* of the late Caleb Hillier Parry, M.D.F.R.S., Vol. I, London, Underwoods, Fleet-Street, 1825, p. 4.

Chromosomal Anomalies And Ocular Defects

A Resume — Part II

Henry L. Birge, M.D.

Senile Pigmentary Retinitis

In the evolution of a herditary degenerative chorioretinopathy, the first symptom usually is "night-blindness"—which often dates from infancy.[4] The visible ophthalmic changes may not appear until an advanced age, (50-60). That is the senile type of pigmentary retinopathy. The absence of retinal changes early in life does not prove that they will not show up in later life.

Often it is not the hemeralopia, but the scotoma which calls attention to the degeneration.

Cases have been reported in which there was more choroidal sclerosis visible than pigmentation in the retina. The pallor of the disc and the attenuation of the vessels distinguish the degeneration from simple sclerosis of the choroid.

The evolution is not always slow. Cases have been reported to have their onset and termination in extremely poor vision with 3 years.

The ERG in sclerosis alone is normal or nearly so, while in degenerative chorio-retinopathies, is abolished.

The heredity of the senile form is more often sporadic.

Retinopathy In Sectors, And Unilateral

There are many theories explaining quadrantic and unilateral locations of hereditary degenerations. Does the responsible gene act directly upon the retina, and is the cerebral defect, when present, a secondary effect? Or is the diencephalon primarily where the gene acts, and the retinal changes the result?

Franceschetti[4] hypothesizes about some of these exceptional manifestations by the recessive gene, that perhaps it is behaving as a heterozygote.

When the attending complications such as deafness occur contra-laterally to the unilateral retinal changes, incomplete penetrance of the gene is hypothesized.

Central And Peri-Central Pigmentary Retinitis

Involvement of the peri-macular area in tapeto-retinal degenerations has been described as a transitional form, between the macular and peripheral, by Duke-Elder.

Macular degeneration has been called "inverse retinitis pigmentosa" by Sorsby, because of the greater incidence of the peripheral degenerations.

Cases of diffuse degeneration affecting the entire retina are not to be included in the group which affects the central areas.

In peri-central types the central acuity is usually retained, while in central pigmentary degeneration there is a central scotoma, with, however, normal peripheral vision.

Hemeralopia is frequent, but the light sense is less affected than in peripheral types.

The functional elements of central tapeto-retinal degenerations are not sufficiently positive to make diagnosis absolute, and easy, even with the ERG. The total abolition of the ERG in the peripheral types is seen to be often incomplete, when only the macular area is affected.

Central choroidal sclerosis also offers a differential diagnostic difficulty, even though the ERG is usually normal in sclerosis. The relationship of choroidal sclerosis and tapeto-retinal degenerations is close, in fact, there is many times seen an intra-family alternation between the 2 conditions. The end results of the 2 conditions are usually the same with optic atrophy, attenuation of the vessels, and defective visual fields, so that they may as well be considered one.

Juvenile macular degeneration also offers a differential problem, and because of the many similarities, probably should be considered as one and the same thing with the hereditary chorio-retinal degenerations, atypical in expression.

Diffuse Tapeto-Retinal Degenerations

When both central and peripheral degenerations are combined, the prognosis is of course more

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serious, and too, the progenitors exhibit more difficulty, as for instance, in the family reported for 4 generations: There were four cases of diffuse chorioretinal degeneration in the 4th generation, consanguinous marriage in the 3rd generation, and epilepsy in the 2nd and 3rd generations.

Leber's Dysplasia, Or Regeneration: Congenital Tapeto-Retinal Degeneration

One of the interesting ideas in this compendium is the tying together of so many rare conditions, and showing how they are based upon genetics. Especially is this true in Leber's Disease, which is shown here to vary from case to case in many notable ways, and yet to be a simple entity.

Perhaps our teaching in America of Leber's Disease has been too oriented to the atlas of fundus diseases and the hospitals for mental retardation, overlooking too often the genealogic aspects.

In the early writings of 1871 Leber described pigmentary retinitis with congenital amaurosis. In 1877 he called it a tapeto-retinal degeneration. In 1916 he separated congenital, infantile and juvenile forms, all with severe amblyopia. In the congenital form he spoke of searching nystagmus with large excursions and a failure to see light held in front of them and no attempt to grasp objects. The digito-ocular phenomena (Franceschetti) is commonly seen; the infant often putting one finger in the orbit and, although nearly blind, seeming to try to filter the light through its other fingers.

In the infantile form retinal pigmentation is often not visible until 8-14 years of age. By this time there may frequently be pallor of the discs, sclerosis of the choroid, complicated cataracts and sometimes deafness.

The psychomotor retardation of these infants is separated from Tay-Sach's disease by the absence of the red spot in the macula, and the absence of Israelite ancestors.

Most of these cases of tapeto-retinal degeneration have been called optic atrophies, and only recently, through the use of the ERG have they been properly separated from the cerebral or optic nerve pathologic states, by the absence of the ERG.

The ophthalmoscopic picture is quite variable. There may be hypoplasia of the vessels, numbers of white points, and some pigmented areas, in addition to the pallor of the disc. Pseudo-papillitis and other anomalies have been described by recent observers, and in 8.9 per cent of the cases a normal appearing fundus has been seen. In all, the ERG is abolished.

The differential diagnosis in all blind, retarded children requires the E.R.G., as well as the examination of the fundus, under sedation.

When the ERG is preserved, other causes of blindness must be considered, such as optic atrophy, Behr's syndrome, hydrocephalus, and all types of cerebral damage, delayed myelination, infantile amauratic idiocy, or other forms of cortical atrophy. Embryopathy or viral retinopathy resemble tapeto-retinal degeneration and must be considered. Retinopathy after rubeosis in the mother also usually has presevation of the ERG.

Figures from Holland and Sweden show that the tapeto-retinal degeneration of Leber occurs in between 16 and 18 per cent of all cases of infantile blindness.

Neurologic Changes In Leber's Congenital Tapeto-Retinal Dysplasia

Only recently has the literature mentioned this aspect of the syndrome. Alstroen and Olson (1957) reporting on 175 cases found 12 per cent had neuropsychiatric anomalies. Francois and DeRouch (1961) reporting 40 cases, found only 37 per cent without general or neurologic abnormality. Most common findings were:

Abnormal EEG (often epileptic type)	42.8 per cent
Mental Retardation	37 per cent
Epilepsy or petit mal	14.5 per cent
Microcephaly	9.6 per cent
Total deafness	11.2 per cent

Many other abnormalities were found in isolated cases, including cortical atrophy, hydrocephalus, porencephaly, flaccid paralysis, various metabolic difficulties, together with nevi, and angiomata.

Fundus Flavimaculatus

Before leaving this type of tapeto-retinal degeneration, mention should be made of a group of cases which should be classified separately, having a normal ERG. 15 personal cases of the authors, named by Franceschetti, Fundus Flavimaculatus, are reported, since 1955.

These have been confused with retinitis punctata albescens, the fundus albipunctatus as well as old disseminated choroiditis.

The confusion is due to the appearance of the fundus, having many white or yellow-white spots or lesions scattered over the posterior pole, and sometimes macular degeneration also. These have been confused with verrucosities of the lamina vitrea, and Fleck-Retina.

However, with normal color vision, and light adaptation, and a normal ERG, the proper diagnosis is Fundus Flavi-maculatus.

There is a relationship between this syndrome and the tapeto-retinal degenerations, as shown by studies of the families, although Fundus-Flavimaculatus has not itself been found to have been transmitted in families.

III. Hereditary Chorio-Retinal Degenerations, Predominantly Central

INFANTILE AND JUVENILE FORMS (STARGARDT)

While numerous authors have assayed to classify the various macular degenerations, on the basis of age of onset, clinical appearance, anatomical location of the lesions, heredity and other factors, it seems probable to the authors that these classifications are rather fragile. They believe that all the polymorphous types are more probably the result of a simple hereditary process, showing variations.

Ophthalmoscopically the syndrome of Stargardt varies greatly, from one family to another, but generally similar in the two eyes and in the same family, although different stages must be noted.

It usually begins with an irregularity of the pigmentation of the macula, although some begin with a discrete edema of the macula. It is best seen by moving the ophthalmoscope light back and forth across the macula. Observation shows that the pigment increases and the color of the macula changes. It seems impossible to separate our thinking about the pigmentary epithelium from that of the choroid.

The size and shape of the lesion varies, as can be seen from many reports. It may even extend into the periphery of the retina.

Visual acuity gradually fails as the central scotoma develops. There is often photophobia and nyctalopia. The light sense is normal, and the ERG is normal, but scotopic. Color vision is abnormal, progressively, in the red-green axis.

The heredity of macular degeneration is certain, and has been reported many times over 2 to 5 generations, as a dominant form. It has also been frequently reported as a simple recessive, occasionally sex-linked, and sometimes isolated cases have been reported.

Many central nervous system anomalies have been reported associated with the syndrome of Stargardt. Progressive deafness, Friedreich's ataxia, congenital hemiplegia, epilepsy, cerebello-spinal degeneration, dilation of the 3rd ventricle and tremors of the upper extremities.

Endocrine abnormalities have also been associated with this form of macular degeneration. Hypothyroidism, abnormalities of the sella turcica, obesity, and craniopharyngiomata have been noted.

An early or premature form of macular degeneration is named after Best who published a family tree of 59 members in 1905, all younger than 7 years. This family was re-examined by June in 1936. In the degeneration of Best, the macular lesian consists ophthalmoscopically of a reddish, well limited disc, larger than the optic disc. It has been described as a sun, seen through the fog. Variations in size and shape and pigmentation do occur.

In Best's cases, the disc was located beneath the macula, and good vision was maintained.

Later students of Best's family have felt that the condition was transmitted as an irregular dominant. They are not certain it was congenital.

In the Best family many other ocular anomalies were also seen: strabismus, amblyopia, cataract, nystagmus, retino-blastoma, and residual papillary membranes.

VITELLIFORME DISCS OF THE MACULA

A curious macular lesion, sometimes called a cyst, has been reported 17 times since 1883. The disc lies beneath the retina, and no vision loss is present. It has most often been noted between the ages of 5 and 14 years, bilaterally in most cases.

ALTERATIONS IN BRUCK'S MEMBRANE

Drusen and hyaline degenerations or verrucosities of Bruck's membrane are considered as a part of the group of central tapeto-retinal-heredo-degenerations.

They should always be studied with the retinal microscope, to determine their exact location in the retina.

Whether they are senile or pre-senile, that they are familial should not be astonishing. Among the syndromes described are:

1. Choroiditis guttata of Hutchinson-Tay
2. Macular Degeneration of Halthouse-Batten
3. Honey-comb macular Familial Degeneration of Doyne
4. Retinitis Circinata—or Malattia Leventinese

There is no essential difference between these syndromes; they all vary among families. They all are characterized by mosaic hyaline patches in the maculopapular area, and tend toward various degrees of macular atrophy.

They are transmitted in a dominant fashion regularly or irregularly.

Anatomically the lesions are the same.

SENILE MACULAR DEGENERATION

When macular degenerations are followed over the years, and not only are patient but the descendant's eyes are seen, it appears arbitrary to separate any particular type of lesion, or to try to place them in absolute classifications.

One will see variations from simple verrucosities of the lamina vitrea, pigmentary depositions, edema, either circumscribed or diffuse, hemorrhages, exudates, followed by organization of fibrous tissue even to the point of resembling pseudo-tumors of the macula, as in the disciform degeneration of Junius and Kuhnt.

The frequency of macular degeneration in a study of old people's homes revealed that 24 per cent between 60 and 80 years were affected. (Kornzweig 1957, Bailliart 1960) After 80, 38.6 per cent were affected.

V. Degenerations Of The Chorio-Retina With Radial Striations

A. ELASTOSIS OF THE RETINA ANGIOID STREAKS GROENBLAD—STRANDBERG

Since 1889 when Doyne first described angioid streaks, there has been a voluminous literature on the many aspects of these interesting lesions.

It was not until several eyes were examined histologically (1938), and genetic studies were made, and knowledge of associated conditions came to light that the correct interpretation was possible.

First Groenblad and Strandberg in 1929 described the relationship of pseudo-xanthoma elasticum. Then Terry described the relationship with osteitis deformans of Paget (1934), and Touraine, the cardio-vascular alterations with hypertension (1941), and finally that associated with sickle-cellanemia by Geeraets and Dupont Guerry (1960) was published.

Ophthalmoscopically, angioid streaks present several charactertistics. They begin as brownish striae, usually radially distributed around the disc, sometimes with evidence of greyish atrophy of the choroid.

They are bilateral, deeper than the retinal vessels, and above the choroidal vessels. Their diameter is usually larger than the retinal vessels, and their borders are irregular. Their course is more angular than the vessels and they extend 2 or 3 times the diameter of the disc. They may end suddenly, or in an area of choroidal atrophy. The retinal pigmentation determines their color generally.

The most serious effect on vision is macular degeneration, which is frequent, reported in one series in 140 out of 188 cases. Often they are accompanied by drusen of the lamina vitrea, and by verrucosities of the papilla.

The macular degeneration often begins as a pigmented area, and then comes the hemorrhagic and exudative lesions which eventually become more or less pigmented as they scar.

The authors cite the fragility of the vessels of the posterior pole of the eye and report several cases in which a minor traumatism seemed to trigger the development of macular or vitreous hemorrhages. The medico-legal aspects of such cases may be important.

Such a diagnosis can not be arrived at without a knowledge of the family tree, and findings of related conditions such as angioid streaks, or pseudoxanthoma elasticum in other younger family members.

In one such case they felt that while there was a hereditary predisposition, the minor trauma shortened the expected duration of good vision.

Another interesting complication the authors describe is that of rupture of the lamina vitrea due to traction by the oblique muscles, which while they produce uniform changes in intra-ocular pressure, find the macular area with less elasticity due to striae and atrophy in the macular area.

The principal lesions associated with angioid streaks, and those that show the streaks to be part of a systemic affection are: a degeneration of elastic tissue.

Lesion

1. Pseudo-Xanthoma Elasticum (Darier)
   Frequency 60 — 80 per cent
2. Cardio-vascular lesions
   30 per cent peripheral arteries
   50 per cent coronary arteries
   10 per cent renal arteries
3. Neurologic symptoms usually vascular
4. Visceral (digestive) symptoms
   repeated gastric hemorrage
5. Paget's Disease
   9 per cent angioid streaks
   39 per cent vascular complications
6. Sicle-cell anemia.
   More pseudo xanthoma elasticum than angioid streaks
7. Other mesenchymal degenerations
   Marfan syndrome (16) (17)
   Ehlers-Danlos syndrome
   Blue sclera
   Thrombo-cytopenic purpura
   Diffuse lipomatosis

HEREDITY OF GREONBLAD-STANDBERG SYNDROME

The majority of cases have been reported as familial. Consanguinity has frequently been reported. The transmission is generally admitted to be in the simple recessive manner. An irregular dominance has been reported in a few cases.

Paget's disease is transmitted according to the incomplete dominant auto-somal manner; penetrance and expressivity are quite variable. In 367 cases only 16 were familial in a report from the Mayo Clinic.

EUROPEAN METHODS OF CLINICAL STUDY OF VISUAL FUNCTION

The routine examination varies rather extensively from that generally used in this country. In half a day, without dilating the pupils, the following tests will usually be accomplished:

1. Measurement of corneal astigmatism
2. Measurement of visual acuity and refraction subjectively (Danders) (to eliminate nocturnal myopia, a light room is required.)

3. Presbyopia.
4. Survey of the visual field on the Goldmann perimeter.
5. Campimetry, using the Bjerrum screen, using colored as well as white objects.
6. Color discrimination, done before a window exposed to North light, or using a Macbeth executive Day Lamp BBX-324, beginning first with the poorer eye.
   The following tests are used:
   Ishihara, Tritan-Plate,
   AO H-R-R, Panel D-15,
   100 Hue, Anomaloscope.
7. Next, before a Goldmann-Weeker's adaptameter, the curve of adaptation is established, after 5 minutes of binocular preadaptation. They may measure the threshold of one eye after 15 minutes. At times, especially in Oguchi's disease, the study of the curve will be prolonged up to 30 minutes and longer.
8. Under dark adaptation, the visual field is studied. It is here that note is made of the relationship of visual acuity and light adaptation.
9. After re-adaptation to light the subject is given several tests concerning the entoptic phenomena (Maxwell's spots, brushes of Haidinger, entoptic perception of the retinal circulation and the boxes of Amsler).
10. Electro oculography, followed by electro-retino-encephalography, and the occipital return.

MOLECULAR BIOLOGY

The greatest hope for solving the riddle of inheritance appears to be coming from the biochemists. This aspect has *not* been considered in the review of clinical cases by Franceschetti et al, but a brief mention should be pertinent in the commentary. It began in 1944 with O. T. Avery's[14] studies on DNA (deoxyribonucleic acid) and it appears that the answers[18] to the problems of genetics lie in the nature and structure of nucleoprotein. This substance has been found to be joined chemically to the protein of the chromosomes.

DNA presently is under investigation in many laboratories, not only from the point of view of geneticists, but as a tool for tracing evolution,[5] in the study of viruses, and in regard to cancerogenesis.

Each of the 46 human chromosomes that make up the fertilized ovum and subsequent cells is estimated to contain 3,000 genes. The chromosomes are therefore believed to tbe composed of strings of genes, each gene determining a different characteristic

When the chromosomes are imperfectly shared in the cell division or replication, the imbalance is shared by all the cells of the body. In 1959 it was discovered that "mongolism" was the result of containing not 46 but 47 chomosomes to the cell.

In 1946 Wendell Stanley, an American biochemist, shared the Nobel Prize in Physiology and Medicine for his work on the tobacco-mosaic virus, which turned out to be a nucleoprotein, like the chomosomes. These proteins produce thousands of enzymes and "albinism", for instance, is produced by a variation in the quantity of a simple enzyme.

Working with viruses, the gene itself was finally found to be composed only of nucleic acid, and the nucleoprotein to be only a supporting medium. It is now well confirmed that nucleic acid is the carrier of the genetic code.

In the early 1950's Sir Alexander R. Todd synthesized chemical structures related to nucleic acid, and was awarded the Nobel Prize in 1957 in Chemistry. 4 nucleotides are possible in any one nucleic acid molecule, and are of crucial importance in the genetic code.

These nucleotides are joined together forming a polynucleotide chain through the phosphate bond. Molecules containing thousands of nucleotides have been obtained. It is estimated that an individual gene may consist of a nucleic acid molecule made up of a chain of between 200 and 2,000 nucleotides.

A polynucleotide chain made up of 20 nucleotides or 5 of each of the 4 varieties, is estimated to have over 1,000,000,000 possible combinations.

It is now generally believed that the nucleic acid molecules carry the genetic code unaided and intact, from cell to cell, and from generation to generation.

Another Nobel Prize in 1954 went to American chemists Linus B. Pauling and R. C. Corey for demonstrating that the polypeptide chain in such proteins as collagen were arranged in the form of a helix or spiral staircase.

Whether the polynucleotide chain or strand maintains itself throughout the life of the individual can only be surmised. Some may find themselves in an egg or sperm-cell, and be continued in the next generation.

How many generations an exact chemical reduplication of a given strand may carry on is open to surmise. Errors occur, and may also be carried on.

Summary

In a few ocular degenerations and anomalies specific abnormal chromosomes have been identified through karyotype study.

The gap between our knowledge of genes and chromosomes, and ocular defects and degenerations is narrowing.

The eye offers another tool for relating physical defects to mutagenic factors. A review and commentary upon many carefully documented ocular de-

generations, most of which are based upon inheritance. has been made. Especially notable is the relationship of ocular degeneration, or specific aging of a single organ, to the general problem of senescense.

Footnote

Authority obtained from Prof. A. Franceschetti and Prof. J. Francois, and from Masson et Cie, Publishers, for abstracting and discussing the foreign work.

(This is the second of two articles.)

References

4. Francheschetti, A. and Francois, J., et al.: Les heredo-degenerescenses chorio-retiniennes. Masson et Cie, Editeurs. Paris, 1963.

13. Birge, H. L.: References to Franceschetti, et al. may be supplied, if requested, in photostatic form at a nominal charge.

16. Schwartz, Harold: Abraham Lincoln and the Marfan Syndrome. J.A.M.A., 187: 7, 473-479, 1964.

17. Wilner, H. I. and Finby, N.: Skeletal manifestations of the Marfan Syndrome. J.A.M.A., 187: 7, 490-495, 1964.

18. Editorial. Modern Medicine. Page 33, February 3, 1964.

A New Fact Or A New Principle?

There are two kinds of discovery. There is the happy chance, such as came to the old-time explorer when he landed in a new country, or who was the first to behold some mountain or waterfall; or such as comes still to the prospector who strikes a vein of gold or finds a diamond. Laennec's invention of the stethoscope was of this nature, and so was Garcia's chance idea of the laryngoscope which came to him as he noticed a little dental mirror in a shop window in Paris. This sudden revelation of an important fact to a mind ready to grasp its significance is the essence of many a discovery.

But there is another kind of discovery which demands greater genius and infinitely greater perseverance; the working out of a principle, in which the first kind of discovery is a mere incident. Harvey's discovery of the circulation was of this variety. Others had toyed with the idea, but no one had pursued it to the end as Harvey did for 12 years before venturing into print. Jenner's discovery of vaccination is another example of prolonged and determined investigation. He pondered his problem for more than 20 years and then published his results. Lister's work partook of this nature. He made it known as he went along, thinking that others might help to confirm the results, and that mankind might be benefited. At first he met with little encouragement and much hostility and, indeed, he had gone into retirement and was an old man before the full meaning of his brilliant scheme dawned upon the surgical world.—Guthrie, D. J.: *From Witchcraft of Antisepsis*: *A Study in Antithesis.* Logan Clendening Lectures on History and Philosophy of Medicine, Fifth Series, Lawrence: University of Kansas Press, 1955, pp. 30-31.

THE PRESIDENT'S PAGE

The 173rd Annual Meeting Of The Connecticut State Medical Society

To many of us concerned with the welfare of the Connecticut State Medical Society, this meeting was one of the best scientific and business gatherings that has been held in many years. On Tuesday, April 27, 1965, more than one hundred and fifty delegates from the eight counties were present to conduct the business of the society. The present status of Medicare legislation, which is under debate in the U.S. Senate, was discussed and the problem explained by many officers and delegates. Concerning Medicare, HR 6675, Dr. James Appel, president-elect of the American Medical Association, at the annual dinner referred to the bill as "Medicake" stating, "To its proponents the concoction is an angel cake. To its opponents it is a devils cake. To the taxpayers it will be a true pound cake. And in the Senate Finance Committee I am hoping it will be a real hot cake." When one realizes the five billion dollar tax increase it will add to the Social Security tax base and rate in 1966, the threat of a business slowdown, caused by the decrease in purchasing power of those bearing the brunt of this Social Security tax increase, is a real hazard to the economy in the years ahead. It seemed obvious to our delegates that Medicare diminishes freedom of all rather than enlarges it, and is a strongly restrictive measure opposed to our traditions of freedom.

The House of Delegates adopted a relative value scale which has long been under study by committees of the society. The members of this and other related committees should be highly commended for the completion of this arduous task. The House also approved the specific use of this relative value scale in future discussions with welfare authorities giving the negotiating committee the power to discuss a unit dollar figure in welfare cases. This is a far reaching innovation in Connecticut State Medical Society policy regarding the setting of fees for specific services. This action invoked lively discussion with differing opinions, even within some county's delegation, but was overwhelmingly passed.

Other highlights of the delegate's meeting were: the excellent reports on Hospital Costs and Accounting Procedures as presented by the Committee on Hospitals; the present status of CONNECTICUT MEDICINE presented by Editor, Louis H. Nahum; the remarks made by retiring secretary, Denis S. O'Connor; and many other exceptional divisional reports.

The general scientific meetings and the sectional scientific meetings, many of which I attended for short periods of time, were excellent with a large attendance present at all gatherings. If one had any doubt of the desire of many of our members for such scientific programs, this doubt has been dispelled. The speakers gave fine presentations and were well versed in their fields of knowledge. They were sometimes provocative, which enhanced the discussions and ably stimulated audience participation invoking well-thought-out questions. If I have any criticism for this part of the program, it is directed to the tardiness of some physicians attending the sessions who straggled in ten to fifteen minutes late for the opening lectures. I am probably showing my age but the time is not too long past when we were brought up to make a special effort, if need be, to arrive on time. I wonder if the fashionable habit of being late for cocktail parties hasn't permeated our scientific world and made us forget the debt we owe those who come from distant cities to share their knowledge with us. If the visiting lecturer can arise in the middle of the night to travel by plane so as to be ready to start at 9:30 A.M., it seems to me that the local physicians should arrive on time before the guest professor starts the lecture.

As I mentioned above, this annual meeting was an excellent one; let us continue to work together this year in ever increasing numbers since it is "now or never" for physicians to close ranks and support their society's efforts to maintain the type of practice which will continue to give the citizens of Connecticut the best medical care in the world.

JAMES R. CULLEN, M.D.

FROM THE GENERAL MANAGER'S OFFICE

William R. Richards, m.d., *General Manager*
160 St. Ronan Street, New Haven, Conn.
Telephone 865 0587

James G Burch
Director of Public Relations

Josephine P. Lindquist
Assistant to General Manager

SUMMARY OF ACTIONS COUNCIL MEETING

Thursday, May 20, 1965

Organization

Following an informal buffet luncheon as guests of the Board of Directors of the Woman's Auxiliary to the Connecticut State Medical Society, the Council was called to order by President James R. Cullen at 2:15 P.M.

I. Attendance

Present, in addition to Dr. Cullen, were: Drs. Hess, Bradley, Goldberg, W. Martin, Weise, M. Caplan, Brandon, Davis, Pitock, Grendon, H. Caplan, Shepard, Rogol, Ciccarelli, Cramer, Fabro, Epstein, Abbot, Petrie and Roch. Also present were: Mrs. Lindquist, Dr. Luca E. H. Celentano, Chairman of the PR Division, and Dr. Richards. Absent were: Drs. Gardner, S. Martin, Egan, Spitz, Hughes, Ayres, Wilson and Hastings.

The President declared that nominations were in order for Chairman of the Council for 1965-66. Dr. Stevens J. Martin, Hartford, was the sole nominee and his election as Chairman was unanimous.

Before adjourning the organizational part of the meeting, it was VOTED to send a message of thanks and appreciation to the Auxiliary Board for inviting the members of the Council to join them at luncheon.

Regular Meeting

In the absence of the new Chairman, Dr. Martin, Dr. Cullen presided during the regular meeting.

II. Routine Business

Approval Of Minutes

As printed and distributed, it was VOTED to approve the minutes of the meeting of April 14, 1965.

Life Membership

It was VOTED to approve applications for Life Membership of the following eligible Active Members of the Society:

Paul L. Brooks, Bridgeport (FCMA)
Robert C. Keys, Norwalk (FCMA)
Alfred Kornblut, Bridgeport (FCMA)
Nathan Levy, Branford (NHCMA)
Paul B. MacCready, New Haven (NHCMA)
Robert M. Taylor, East Haven (NHCMA)
Cecil R. Garcin, Danielson (WCMA)

CSMS Dues Exemptions

It was VOTED to approve requests for exemption from payment of CSMS membership dues as follows:

Carl M. Cassin, New Haven (NHCMA)—1965 dues—Residency Training.

Julius Landwirth, New Haven (NHCMA)—½ year 1964 dues—Postgraduate Training.

James M. Keegan, Milford (NHCMA)—½ year 1964 dues—Hardship.

William F. Lynch, New Haven (NHCMA) — retroactive exemption 1963 and 1964 dues — Residency training.

Committee Resignations

It was VOTED to accept, with regret, two resignations from committees as follows:

From the Conference Committee with the Bar Association—Milton M. Lieberthal, Bridgeport.

From the Committee on Third Party Payments—Stephen H. Deschamps, Bridgeport.

Request—AMA Committee on Medicine and Osteopathy

It was VOTED to request Max Caplan, Meriden, to represent the Society at the meeting of this AMA Committee in New York on Sunday, June 20, 1965. The session will last from 9:00—1:00 P.M. in Royal Ballroom B of the Americana Hotel, and AMA Delegates, Alternates, officers, and other members of the Council are also urged to attend.

Date of Next Meeting

It was determined by the President that the date of the next meeting be tentatively set for Wednesday, June 16, and that the necessity for calling a meeting on that date is to be determined by the Chairman and the General Manager.

III. Old, New And Special Business

Report—Committee on Preliminary Study of Censorship Questions

It was VOTED unanimously to accept the report and recommendations of this Committee in the appeal of Moorad vs. HCMA, and to notify the two parties to the appeal of the conclusions and recommendations contained therein. In brief, the Council voted to support the April 22, 1964, disciplinary action of the Board of Directors of the Hartford Association.

In a related action concerning this Committee, it was VOTED that the 1965-66 Committee on Preliminary Study of Censorship Questions be empowered to act as an ad hoc committee of the Council to study matters of its own procedure in hearing appeals, etc.; be authorized to consult with any outside individuals and agencies it desires; and be directed to report to the Council on these matters as soon as its studies are completed.

Report—Committee To Study Maternal Morbidity And Mortality

Prepared and filed by this Committee, it was VOTED to accept a report concerning revisions in the section of the document "Recommended Standards for Obstetrical Care" which is titled: "Recommended General Policy of Obstetrical Departments"; to authorize publication of the report in the Journal; and to transmit copies of the report to the State Department of Health and the chiefs of community hospital obstetrical departments as a "guide to evaluating the structure and function of such departments". Henry Caplan, Councilor from NHCMA, wished to be recorded as voting "no" on this question.

Resolutions—1965 Annual Meeting Of AMA House Of Delegates

It was VOTED to approve two resolutions for transmittal by CSMS to the House of Delegates of the AMA, New York, June 20-24, 1965. Titled respectively "Third Party Agencies and Patient Care" and "Cautioning Over-65 Population re Cancelling Voluntary Health Insurance". These resolutions are published at the end of these minutes.

200th Anniversary—LCMA

David A. Grendon, Councilor from LCMA, informed the Council that the Litchfield Association is planning to celebrate its 200th anniversary in 1966 and would welcome participation by the Society. It was VOTED that the Society participate in the celebration of this anniversary, and to direct the President to appoint an ad hoc committee to cooperate with LCMA and help coordinate the participation of CSMS with the plans being made by the Litchfield County Medical Association.

Distribution—CSMS Relative Value Study

Pursuant to a directive of the House of Delegates, it was VOTED to approve a proposed plan to furnish each member of the Society with a copy of the Relative Value Schedule adopted for CSMS by the House on April 27, 1965. Including purchase of 4000 copies of the "1964 California Relative Value Studies, 4th Edition", printing and postage costs, etc., it is estimated that total expense for this undertaking will be about $4500. Using the $1800 remaining for the Opinion Survey-Relative Value Study, the anticipated supplementary expenditures will amount to about $2700.

Corporate Donation to COMPAC

Pursuant to a motion adopted by the House of Delegates on April 27, 1965, it was VOTED (10-9) to donate the sum of $5000 to the Connecticut Medical Political Action Committee to be used by COMPAC exclusively for political education purposes. Approval of this type of activity by the Society was obtained from legal counsel in 1964, when a similar grant of $3000 was made to COMPAC.

A RESOLUTION: THIRD PARTY AGENCIES AND PATIENT CARE

Introduced By The Connecticut State Medical Society

Whereas: The number and types of third party agencies having to do with medical care and its financing continue to increase in the United States of America, and

Whereas: Apart from the commendable function of making payments for medical and health care services, third party agencies may exert or tend to exert varying degrees of influence on other important aspects of the practice of medicine, therefore be it

Resolved: That the House of Delegates of the American Medical Association reaffirm its opinion that the rendering of the highest quality of health and medical care to all persons is the primary objective of the American medical profession, and be it further

Resolved: That, in keeping with its corollary opinion that the free exercise of professional judgment by each individual physician is essential to the attainment of this objective, the House of Delegates of the American Medical Association urge each member of the Association to voluntarily sign the following pledge:

> "I, ——— (name) ———, M.D., being engaged in the practice of medicine, do hereby renew my pledge to render to all of my patients the highest quality of health and medical care and to assist my colleagues to do the same. I pledge further that I will neither recognize nor be bound by any third party agency which, *in my opinion,* by regulation, restriction or otherwise, might tend to impede or prevent me from fully realizing these objectives, nor will I accept *direct* payment for my services from any such third party agency on the grounds that my acceptance might be interpreted as agreement to be regulated, restricted or otherwise hampered in maintaining the free exercise of my best professional judgment,", and be it further

Resolved: That the House of Delegates of the American Medical Association request each member of the Association who voluntarily signs this pledge to place one copy on file with the Association's Executive Vice President and to prominently display a duplicate copy at his place of practice.

Approved by CSMS Council—5/20/65.

A RESOLUTION: CAUTION TO OVER-65 POPULATION RE CANCELLING VOLUNTARY HEALTH INSURANCE

Introduced By The Connecticut State Medical Society

Whereas: Millions of Americans age 65 and older are currently enrolled in voluntary health insurance plans which provide them with broad protection against the larger costs of needed health services, and

Whereas: These voluntary plans assure policyholders of freedom to choose the providers of their personal medical care, and full payment of guaranteed benefits upon submitting simple proof of enrollment and prescribed utilization, and

Whereas: Federal "medicare" plans curtail freedom of choice by the patient, and provide that the minimum benefits authorized will be paid only after strict compliance with rules and regulations imposed by law and with additional rules and regulations imposed, from time to time, by the Secretary of Health, Education and Welfare, therefore be it

Resolved: That the House of Delegates of the American Medical Association discharge its responsibility to the public by cautioning people age 65 years and older against discontinuing their voluntary health insurance policies unless and until they have compared carefully the broad coverage and minimal restrictions guaranteed by these policies with the curtailed freedom of choice, narrow coverage and complex administrative rules and regulations of the government's so-called "medicare" plans, and be it further

Resolved: That the House of Delegates direct the Board of Trustees of the American Medical Association to develop and implement a nationwide educational program to assist all persons concerned with financing health services for the aging to make an informed comparison between the pertinent features of voluntary insurance plans and those of compulsory "medicare".

Approved by CSMS Council 5/20/65.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on May 20, 1965. Detailed minutes of the meeting are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

NEW MEMBERS

Fairfield County

Hugh S. P. Binnie, Bethel
William H. Bockman, Bridgeport
Cajetan T. Chiaramonte, Danbury
Joseph F. Connolly, Bridgeport
William T. Cronin, Norwalk
Ezra E. Dorison, Westport
Thomas A. Dwyer, New Fairfield
Thomas G. Flynn, New Canaan
Allan E. Garb, Cos Cob
Nelson A. Gelfman, Danbury
Charles J. Kallick, Darien
Sami E. Kassim, Trumbull
Reuben K. Kenigsberg, Bridgeport
Jesse S. Manlapaz, Danbury
Edward E. Mardini, Bridgeport
Charles D. McCullough, Bridgeport
Johannes F. I. Klein Robbenhaar, Bridgeport
William A. Shafto, Danbury
Joseph M. Simonelli, Danbury
Eustace J. Stathacos, Fairfield
Emily F. Upton, Danbury

Hartford County

Walton P. C. Clason, Hartford
Joseph W. Crowley, New Britain
Edward P. Flanagan, Hartford
Thomas J. Godar, Hartford
Morton H. Goldberg, Hartford
James H. Hardy, Hartford
David L. Hedberg, Hartford
Wayne F. Hosking, Hartford
Marvin Levine, Bloomfield
Garner L. Lewis, Hartford
Erik Linnolt, Hartford
Raul E. Lopez, Kensington
Victor R. Marquez, Hartford
Thomas P. Moylan, Hartford
Elizabeth Pollack, Hartford
Moe B. Rosenthal, Hartford
Karen Shahnazarien, Rocky Hill
Robert E. Waugh, New Britain
Donald R. Wieche, Hartford
Andrew F. Zembko, New Britain

Middlesex County

Joseph A. Havlicek, Higganum
Herbert A. Kaufmann, Middletown
Edward A. Longo, Middletown
John F. Lowney, Jr., Middletown
Robert B. Miller, Middletown
Louis Perlin, Middletown

Tolland County

Neil F. Mara, Rockville

PLACEMENT WANTED

ORTHOPEDIC SURGEON – Board diplomate, 31 years of age, wishes to establish in Connecticut with a group or an associate. Is presently chief resident in University hospital service.

INTERNIST—wishes group practice or association. University trained, presently in practice, would like to locate near medical center. 36 years of age, military obligation completed.

INTERNIST—32 years of age, university trained, completing military duty as of July, 1965, would like partnership or group practice in large city. Board eligible, good hospital training background.

OBS.-GYN—Board eligible, 34 years of age, seeks partnership or group practice in Southern Connecticut.

OBS.-GYN.—36 years old, completing 4 year university residency, July, 1965, military obligation completed, seeks partnership or group association.

G.P.—Young G.P. with 6 years solo practice plus other experience would like to associate with small group or a partner in suburban community about July 1.

G.P.—Connecticut license, 43 years of age, available June 30, 1965, would like small group practice or partnership in Connecticut.

PHYSICIAN trained in Physical Medicine and Rehabilitation, Board eligible, Connecticut licence, wishes to practice with an associate or in an institution.

OBS.-GYN.—35 years of age, Board Certified, wishes to locate in Connecticut in either solo or partnership practice. Presently completing military obligations and will be available shortly.

PLACEMENT OPPORTUNITIES

PRACTICE FOR SALE—six room office, semi-attached four bedroom house. Long established practice in southwest Connecticut. Ideal for G.P. or Internist.

INTERNIST—Rare opportunity for young man. Internist in Stamford, Connecticut desires to share his well-equipped office with compatible colleague. Especially suited for hematologist or psychiatrist. Available October 1st.

G.P.—wishes partner for large practice in quickly growing town in eastern Connecticut.

G.P. & PEDIATRICIAN – needed for town in Northern Connecticut. Excellent location close to several hospitals.

CONNECTICUT licensed M.D. as Full-Time House Officer for 5-day week in an expanding accredited hospital. Salary $12,000 a year. Reply to: P.O. Box 638, Bridgeport, Connecticut 06601.

OPHTHALMOLOGIST, PEDIATRICIAN, RADIOLOGIST—Opportunity for Board eligible or Board certified ophthalmologist, pediatrician and radiologist to join a group of physicians being formed for a new building to be completed by July 1965. Large University hospital and one other hospital close by.

MIDDLETOWN, CONN. is seeking physicians to fulfill community needs. Gen'l. Pract., Pediat., Orthoped., E.N.T., Ophth., Neurosurg., and Neurol. are needed to establish private or partnership practice—qualified men will receive appointments in fully accredited 225 bed general hospital. For details, write: President, Medical Staff, Middlesex Memorial Hospital, Middletown, Conn.

ANYONE INTERESTED IN THE ABOVE IS ASKED TO COMMUNICATE WITH THE GENERAL MANAGER'S OFFICE, 160 ST. RONAN STREET, NEW HAVEN.

1965 MEETINGS

September 24—40th Clinical Congress to be held in Mary S. Harkness Auditorium at the Yale University School of Medicine, New Haven. The program will be devoted to "Advances in the Treatment of Infection" and "Advances in the Treatment of Shock".

December 1—Connecticut Society of American Board Surgeons Annual Meeting to be held at the Hotel America in Hartford, Connecticut.

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NOTICE OF SPECIAL REPORT

For many years, the State Health Department and other agencies have been using as a guide to evaluating obstetrical departments in Connecticut a document titled: "Recommended Standards for Obstetrical Care". On May 20, 1965, the Council accepted a report filed by the Society's Committee to Study Maternal Morbidity and Mortality which revised that section of the document titled: "Recommended General Policy of Obstetrical Departments"; authorized publication of the report in Connecticut Medicine; *and approved its transmittal to the State Department of Health and the chiefs of community hospital obstetrical services to be used* voluntarily *as a guide to evaluating the structure and function of such services.*

The text of the report follows:

REPORT OF THE COMMITTEE ON MATERNAL MORBIDITY AND MORTALITY OF THE CONNECTICUT STATE MEDICAL SOCIETY

Subject: Recommended General Policy Of Obstetrical Departments

The policy of each obstetrical department should be determined by the departmental chief in consultation with the obstetrical staff.

The following recommendations of the Committee to Study Maternal Mortality and Morbidity of the Connecticut State Medical Society and its subcommittees are suggested as guides for the establishment of obstetrical policy.

Each hospital should define and list what it considers as normal and major obstetrical procedures. Each physician should have his obstetrical privileges defined in writing. Physicians with normal obstetrical privileges should be required to have consultation for all conditions listed under the heading of Major Obstetrical Procedures. When an obstetrical patient is hospitalized during her pregnancy on any other service (Medicine, Surgery, etc.) obstetrical consultation should be mandatory. Also, such a patient should be seen by a qualified consultant representative of the service to which she is being admitted. Except in extreme emergency situations, no obstetrical patient should be exposed to any surgical procedure without prior obstetrical consultation.

Consultation

A. *Consultants*

All consultants (obstetrical, surgical, medical, pediatric, anesthetic, etc.) should be qualified to give an opinion on the subjects on which their opinions are sought. Such qualification may be on the basis of Board Certification, Board Eligibility, or accreditation for consultation by the hospital staff, and be approved by the obstetrical department. A consultant should be a member of either the attending or consulting staff of the hospital. A panel of consultants, representing the major services should be available. When appropriate such consultations should be available without fee. A satisfactory consultation should include the examination of the patient and her records and a signed written opinion which is made part of the record. The doctor-patient relationship should be enhanced, and not disrupted by, the use of a competent consultant.

B. *Obstetrical Consultants*

The obstetrical patient may merit consultation: early in her pregnancy, any time during her ante natal course, during labor, during the postpartum period, or during the entire period from conception to delivery. A request for consultation should be made at the earliest possible moment and not delayed until the situation is critical. The physician requesting a consultation should receive an appropriately prompt response by the consultant in seeing the patient and in rendering his report. All hospitals should have an active Maternal and Perinatal Mortality and Morbidity Committee and one of its functions should be the evaluation of the proper use of consultations. The local education programs should be geared to alert all physicians to the early recognition of situations which merit consultation.

A Classification Of Obstetrical Procedures

The fate of both mother and the fetus, before birth, during birth, and after birth, is part of the unseparable whole. Any effort to improve the condition of one would be reflected in the condition of the other. With this in mind, the following classification of procedures is offered:

Normal Obstetrics

1. Spontaneous vertex deliveries

2. Outlet forceps, with the vertex distending the perineum
3. Repair of first and second degree perineal lacerations, and episiotomies
4. Artificial rupture of membrances in labor, after full dilation of the cervix and with the vertex deeply engaged.

Major Obstetrics

A. Antepartum (Inpatient or Outpatient)

1. *Medical conditions complicated by pregnancy* Cardiovascular Disease; Diabetes; Nephritis; Tuberculosis; Anemia, etc.
2. *Toxemia* (refer to Recommendations For the Prevention of Toxemias of Pregnancy)
3. *Thrombophlebitis* (Current or past history of same, with or without pulmonary embolus)
4. *Previous Uterine Incision* (Section, myomectomy, etc.)
5. *Abnormal Uterine Bleeding* (1st, 2nd, or 3rd trimester)
6. *Abortions* (Induced; Spontaneous, if incomplete or septic)
7. *All Acute Medical or Surgical Complications of Pregnancy*
8. *Rh Sensitization* (All patients should have an Rh determination early in pregnancy, and, if Rh negative, titers for sensitization done at 20 weeks, 28 weeks, and as often during the last month as reports indicate.
9. *Abnormal Papanicalaou Smears* (All obstetrical patients should routinely have Pap. smears)
10. *Polyhydramnios* (with or without fetal anomaly)
11. *Intrauterine Death of Fetus*
12. *Multiple pregnancies*
13. *Abnormal Presentation*
14. *Poor Fertility History* (infertility; previous ectopic pregnancies; two or more fetal losses in any trimester)
15. *Poor Obstetrical History* (abnormal labors, difficult deliveries, etc.)
16. *Premature Rupture of the Membranes* (twenty-four hours or longer)
17. *Fetal-Pelvic Disproportion* (clinical or x-ray evidence)
18. *Any Unusual Situation in which the diagnosis or treatment is in doubt*

B. Intrapartum

1. *Abnormal Vaginal Bleeding* (Placenta previa, premature separation of placenta, etc.)
2. *Toxemia* (Same as Antepartum)
3. *Infection* (Temperature of 100.4°F orally, elevated pulse, etc.)
4. *Induction or Stimulation of Labor* (Use of any oxytoxic prior to delivery, artificial rupture of membranes, etc.)
5. *Rupture of Membranes for twenty-four hours or more*
6. *Undelivered after 12 hours of Labor or Prolonged Second Stage* (1 hour in a multipara or 2 hours in a primipara)
7. *All Abnormal Presentations*
8. *All Breeches* (Primip. or multip.)
9. *Primigravida in Labor with Unengaged Vertex*
10. *Any Patient in Labor with a High or Uncertain Presenting Part.*
11. *Abnormal Quality of Labor* (Excessive or inadequate tone, frequency and length of contractions)
12. *Fetal Distress* (Fetal heart below 100 following several contractions)
13. *Prolapsed Cord* (Frank or occult)
14. *Primigravada* (Age of 35 or over; 16 or under)
15. *Multipara over 40*
16. *Anticipated Operative Obstetrics* (Forceps, other than outlet; internal versions; manual removal of placenta; etc.)
17. *Prolonged Third Stage* (30 minutes or more)
18. *Anesthesia* (Intrapartum consultation with anesthetist is often desirable re physical status of patient, choice of agent, etc. See recommendations under Anesthesia)
19. *Major Lacerations of the Birth Canal* (Third degree lacerations, extensive sulcus tears, cervical lacerations, etc.)
20. *The Poor Risk Patient* (No prenatal care, the grande multipara; i.e., Para V or more)
21. *Any Unexplained Aberration of the Vital Signs*
22. *Any Case in Which the Diagnosis or Treatment is Not Clear* (Threatened premature labor, post-maturity, abnormal complaints or physical findings, etc.)

C. Postpartum

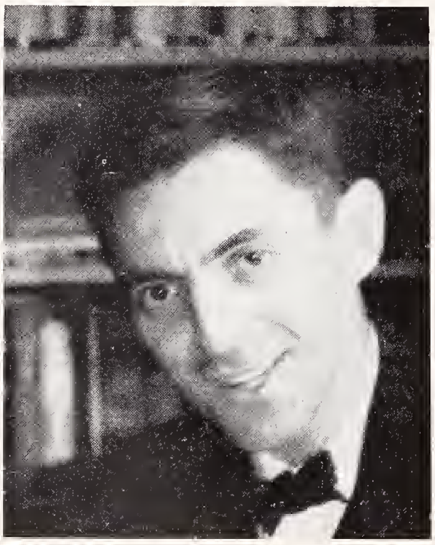
1. *Post-partum hemorrhage* (Retained placenta, uterine atony, lacerations of birth canal, etc.)
2. *Hematomas* (Perineal, vaginal, broad ligament, etc.)
3. *Toxemias* (Same as Antepartum)
4. *Infection* (Temperature of 100.4°F, orally, over two consecutive days)
5. *Shock* (Whatever cause, known or unknown)
6. *Anesthetic Complications* (Aberrations of the respiratory system, cardiovascular system and central nervous system)
7. *Pulmonary Embolus* (Amniotic fluid, phlebitic or bacteremic)
8. *Any Appropriate Indication for Consultation as listed under Antepartum and Intrapartum*
9. *Any Unusual Physical Findings during the Postpartum Period* (Persistent tachycardia, respiratory distress, unusual complaints, abdominal distress)

OBITUARY

Theodore Goldstein, M.D.

1923 - 1965

Theodore Goldstein, psychiatrist and child psychiatrist, died in New Haven Hospital April 7, 1965, at the age of 42 years. Born in Fall River, Massachusetts, he was educated in Connecticut, where he graduated from Weaver High School in Hartford, Wesleyan University, and Yale University School of Medicine. After an internship in pediatrics at Long Island College Hospital in New York, he returned to Connecticut for psychiatric residencies in New Haven and Newington. A child psychiatrist by training and avocation, he had experience as a Commonwealth Fellow at what is now the Clifford Beers Guidance Clinic in New Haven, and, later, as a staff member of the Hartley-Salmon Clinic in Hartford, the New Britain Child Guidance Clinic, and the Children's Services of Connecticut. He was certified by the American Board of Psychiatry and Neurology in psychiatry in 1955. From 1955 to 1957 he was co-director of the Children's Clinic at the Institute of Living, during the earliest years of its formation, and continued teaching and supervision there as late as 1962. He was on active duty in the United States Army from 1943 to 1945. Hospital appointments included the Hartford Hospital and Mount Sinai Hospital in Hartford.



Just as he was drawn to child psychiatry at a time when the sub-specialty was far from recognition, Theodore Goldstein was also a pioneer in what would now be called "community-oriented" psychiatry. In 1953 he became psychiatrist for the West Hartford Public Schools, a position he held at the time of his death. There he was instrumental in building an interlocking pattern of guidance and psychiatric services for school children, with the hope of making psychiatric knowledge obtainable in an informal manner. His was an affectionate and lively nature, one to which life was neither a game nor a gamble, and he was in the vanguard of psychiatric development because it was there that he saw the opportunity for productive and creative expression in his specialty. A skillful and courageous therapist, he had little use for self-applause, and on the basis of his own participation at all levels of service, succeeded in making the impersonal personal.

Those who knew and worked with Theodore Goldstein have put appreciative tributes to him into words, the sense of general loss an indication of the impression his too brief professional career had made. He treasured his friends, old and new, and his family ties. He was married to Beverly Lightman and found great happiness in his home and his three daughters. He welcomed the ceaseless movement of life, glad to go wherever its restless current might carry him.

M. H. January, M.D.

In Memoriam

Flaherty, John E. — Rockville; University of Georgetown Medical School, 1908. Dr. Flaherty practiced medicine in the Rockville area for fifty years, before retiring about five years ago. He was former chief of staff at the Rockville General Hospital and initiated its X-ray department. He was health officer and medical examiner for several Tolland County towns including Andover, Bolton, Columbia, Tolland, Vernon and Ellington. Dr. Flaherty was a member of the Tolland County Medical Association, the Connecticut State Medical Society, and the American Medical Association. He was a member of the State Board of Fisheries and Game for ten years and the Vernon Board of Education for 26 years, serving part of the time on both boards as chairman. Appointed to the State Board of Fisheries and Game in 1941, Dr. Flaherty worked to expand facilities for Connecticut sportsmen. He was especially known for his interest in field trials and was an active member of the state and New England Field Trial Association, serving as a judge throughout New England. He was a charter member of the Rockville Fish and Game Club. Dr. Flaherty died April 30, at the age of 79.

Granniss, Irwin — Northford; Yale University School of Medicine, 1896. Dr. Granniss was former president of the Connecticut State Medical Society and the oldest living graduate of the Yale School of Medicine. Dr. Granniss had practiced medicine in Saybrook for 44 years and also served as town medical examiner and on the Boards of Education and Finance. He was formerly on the staff of Middlesex Hospital and was a former president of the Middlesex County Medical Association. Dr. Granniss was a 50-year member of the Connecticut State Medical Society. He was also a member of the Middlesex County Medical Association and the American Medical Association. Dr. Granniss died May 10, at the age of 90.

Schaefer, Abraham M. — Hartford; Yale University School of Medicine, 1925. Dr. Schaefer was a prominent internist in the Hartford area for many years. He was a member of the staff at Mt. Sinai Hospital and McCook Memorial Hospital and on the courtesy staff at St. Francis Hospital and Hartford Hospital. He was the visiting pathologist and associate physician for the Connecticut State Veterans' Administration Hospital in Newington from 1931 to 1940. Dr. Schaefer was the author of several scientific papers published in medical journals. He was a member of the Hartford City Medical Society, the Hartford County Medical Association, the Connecticut State Medical Society, the American Medical Association, the American Board of Internists, and the American Board of Internal Medicine. Dr. Schaefer died May 1, at the age of 64.

Tombari, S. Paul — Waterford; Boston University School of Medicine, 1934. Dr. Tombari, a specialist in tuberculosis, served as assistant superintendent at Seaside in Waterford, when that institution was designated by the state as a children's T.B. center. He retired from that post in 1962 after 19 years of service. Prior to that, he had spent four years at Cedar Crest Hospital, Newington. Dr. Tombari entered the Army Medical Corps in 1944 and was discharged as a first lieutenant in 1945. He was New London county district director of the teenagers' march against leukemia in 1963 and headed the New London county benefit fund drive for St. Jude's Hospital for children. Dr. Tombari was a member of the medical staff of Lawrence and Memorial Hospitals and served as a medical adviser to General Dynamics Electric Boat in Groton. He was a member of the New London County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Tombari died May 3, at the age of 56.

The Case For Contraceptive Pills

The contraceptive pill is safe for the vast majority of women, and is not medically undesirable, as some have claimed, says an article in the current Journal of the American Medical Association.

In an article entitled, "Let's Be Honest About The Pill!" John Rock, M.D., of the Rock Reproductive Clinic, Inc., Brookline, Mass., discusses medical features of contraceptive drugs currently in use.

"The most common side effects of the pill are those which normally accompany the first few weeks of a normal pregnancy, but they are never as severe as those commonly seen in pregnancy," Dr. Rock said.

These discomforts are edema (swelling), usually in the feet or hands, and nausea.

"As medication is continued the side effects usually subside, but, if necessary, well-known adjunctive pharmaceuticals will probably bring relief. Furthermore, these complaints are made by no more than 20 per cent of the women who take the pills, and with most the discomfort is mild, temporary and intermittent," Dr. Rick said.

Perhaps 5 per cent of all women find one brand of pill less troublesome than another, and "not more than 2 per cent of all women cannot take any authorized brand," Dr. Rick said.

"Some of the pills are of the male-sex-hormone series, and as such, at a daily dosage level of about 10 mg., could theoretically disturb the development of the urogenital tract of a female fetus. However, this could happen in serious degree only if medication of this type were given to a woman fairly constantly during the first 8 or, at most 12 weeks of her pregnancy.

"The pills, or progestins, are sometimes so used in an effort to improve the endometrial support of a fetus thought to be in danger of aborting. For this purpose, at least 10mg. per day of one of the pills of the estrogen series is advisable, especially during the first three months of pregnancy," Dr. Rock said.

Another unsound speculation, he said, is that use of the pills postpones the menopause. Although the pills don't postpone menopause, the sex steroids they contain are useful in relieving distressful symptoms at this time, Dr. Rock said.

It is true that the pills cause metabolic changes which stimulate pregnancy, and this may disclose latent diabetes or thrombophlebitis. The pills don't cause the symptoms, however, they only bring them out. Early revelation of such a condition should be considered a "prophylactic blessing," Dr. Rock said.

WOMAN'S AUXILIARY

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Report Of The President Of The Woman's Auxiliary To The House Of Delegates Of The Connecticut State Medical Society

April 28, 1965

It is with a great deal of pleasure that I am here to report on the accomplishments of the Woman's Auxiliary to the Connecticut State Medical Society for the past year.

Before I delve into the various committee activities, I would like to tell you about a step forward on the part of the Woman's Auxiliary to the American Medical Association through the generosity of the AMA.

Until this year our national bulletin was not reaching our membership of 85,125 women. The national auxiliary board of directors felt that we had to have a new magazine that would be interesting and informative. It had to link one state to another with publicity of work attempted and accomplished. Also, ideas for projects could be introduced and shared through this medium. The board was anxious to have each member receive the four publications. This line of communication to every member was not possible without more dues revenue, and this source would take time to effect. The board of trustees of the American Medical Association was approached, and our publication was studied by members of its editorial and circulation department. The decision reached was that the American Medical Association would finance a new publication for a two-year period, until the end of 1965-1966, and that each auxiliary member would receive it gratis.

Because of this new publication our dues to the national auxiliary have been increased from one dollar to two dollars per capita. This extra dollar will adequately take care of publishing costs when we assume the financial obligation. In the meantime, each county has been increasing its dues in order to send the state auxiliary the extra $1. for national. We all feel this bulletin is necessary to pass information on to our general membership, and it may be persuasive in recruiting active members.

Our School of Instruction was held at the New Haven Medical Library with "Better Health-Better World", the national auxiliary's slogan as our theme. The chairmen of the committees were divided into three groups. Each chairman outlined her plan and program for the coming year. A ten minute discussion, duly moderated, followed each group. Dr. William R. Richards, Executive Secretary of the Connecticut State Medical Society, spoke to us on "Legislation—Pending and Passed".

During the summer "A Summer Study Project," organized by Dr. Bernard F. Mann, Chairman of the Health Careers Committee for the Connecticut State Medical Society, to develop a statewide, coordinated career guidance and information program under a central agency, was instituted. Directors and leading officers of various health organizations, school and hospital administrators were invited to attend. Mrs. William R. Richards, our President-Elect, Mrs. Edward P. Allen and Mrs. Saul Karpel, Chairman and Co-Chairman, respectively, of our Health Careers Committee, and I represented our auxiliary at these meetings. After the original meetings, the planning committee met to set up a constitution and by-laws for the Connecticut Health Careers Council, as it is to be called.

The health careers programs of each county, excepting Hartford which has no committee, are flourshing and getting excellent recognition. It is getting to a point where hospital auxiliaries, nursing groups, guidance directors, and allied medical groups are requesting material so that they can present these programs. The number of opportunities for a career in the allied medical field are increasing in number, and our youngsters are being made aware of these careers. Requests for information from these youngsters are increasing yearly.

Each of our seven counties has had a fund raising affair for the dual program of funds for the medical schools and the loan guarantee fund. These affairs have been in the form of luncheons, fashion shows, card parties, and dances. Our members have been selling baked goods, playing cards, Christmas, sympathy and appreciation cards, notepaper, and charms. Although our physician families probably contribute the bulk of money raised, these affairs are open to friends and neighbors.

Along with this AMA-ERF program, our county auxiliaries also raise money for their individual scholarships for nurses, medical students, technicians, etc. Windham County had an "Evening of Music" program for this purpose and raised $465. Hartford County had a dinner dance and realized the sum of $1,005. New London County presented the sum of $300 for the nurses' scholarship fund at two hospitals.

Since service is the best medium of communication with the public, our members have participated in many projects. They have displayed health education material at county fairs, and Litchfield County covered three fairs at the request of the Connecticut State Medical Society. We have distributed pamphlets on immunization and health posters in physicians' offices, schools, and in other public places. Litchfield County presented the schools in the area with subscriptions to "Today's Health".

Our members visit patients at mental and veteran hospitals, and provide birthday cakes, clothes, and jewelry to entertain them. They contribute money to the canteen fund of the hospitals, and sometimes have programs for the patients. New London County presented bridge tables to the Norwich State Hospital, and contributed $25 to the canteen fund. It also provides two coffee hours per month there. New Haven County had a coffee hour at the Veterans' Hospital for thirty patients. Middlesex County presented a radio to the pediatric service of the Middlesex Memorial Hospital, and took sixty patients of the Connecticut Valley Hospital to the Shriner's Circus. The Hartford County women help with the meal-on-wheels project conducted under the service of the Hartford Health Department's Home Care Program. They manned the registration for a symposium held by the Kidney Foundation of America, helped with eye screening of pre-school children, and at glaucoma clinics. Windham County helped with their eye-screening program of pre-school children, and with the program extended to check the eyes of children in school.

The International Health Activities Chairman of each county collects medical text books and magazines for use in hospitals, clinics, and medical schools in under-privileged countries. These are taken to the Darien Book Aid Plan, Inc., a volunteer organization, and an outlet approved by the Department of International Health of the American Medical Association. There this material is screened, packed, and shipped through the United States Information Agency to the United States Information Centers all over the world. The material is then distributed to individuals, schools, and hospitals that have requested it. Through the splended cooperation of our auxiliary and the Darien Book Aid Plan, Inc., which incidentally is known by all our auxiliaries throughout the United States, Hawaii, Alaska, and Canada, many people have benefitted all over the world. Samples of medicines, bandages, hospitals, or office equipment donated by our doctors have been collected and sent to the International Health Activities Committee for distribution throughout the world.

The state auxiliary changed the name of the Civil Defense Committee to the Disaster Preparedness Committee. The term is used by the national auxiliary for it better defines the duty of this committee in times of distress such as hurricanes, fires, floods, explosions, etc. At Governor Dempsey's Civil Defence Conference for Women held at the University of Connecticut which I attended, the parallel between emergency activities in natural disasters and nuclear attack, and the importance in both instances of preparedness and training were stressed. Our members have received information on methods of protecting lives and property when disaster strikes. They also have received information on gun safety, seat belt protection, the block mother plan, and educational material for baby sitters. It is through educating ourselves that we can help our neighbors.

Legislation has been of vital importance during this year. Our members actively participated in many communities on the political scene. They worked on voting lists, called voters to vote, and, in general, helped to awaken the public to its responsibility to vote an election day. Our women wrote letters and sent telegrams to our Congressmen relative to the Medicare Bills, and again on the Eldercare Plan. Relative to our own state laws we went on record as being in favor of Bill HR2874 on Child Abuse, stressing that no time limit be set on reporting cases, that a physician or any other person be able to report these cases to the local or state health departments, with immunity from civil or criminal lawsuits. We have indicated our interest in fluoridation. Our auxiliary is a member of the Connecticut Health League ,to which we pay dues.

Health education in schools has been of interest to the auxiliary. One of our members, Mrs. Dewey Katz, is a member of a sub-committee of the Connecticut Advisory School Health Council. Recently, a survey was made on how health education is taught in the schools, and the state laws governing the teaching of health education in public schools. From this data a recommendation to the Commissioner of Health and Education will be made.

A few of our counties have arranged to have radio stations play the records provided by the Department of Mental Health of the American Medical Association on alcoholism, suicide, and other mental problems. Each subject on these records is discussed by four leading physicians in the field.

The gap between the auxiliary membership and the membership of the state society is wide. Our membership to date is 1,153, and the society's is approximately 3,600. A plan of the national auxiliary to help narrow this gap is the addition of the auxiliary dues to the physician-husband's dues to the county medical society. In this way, the hope is strong that many wives will automatically become members of the auxiliary, and will subsequently become interested in our projects. This combination of dues is in existence in a number of states and is proving effective. It is our hope that this matter will be given some thought by you gentlemen of the House of Delegates. In numbers we would be stronger, we could accomplish more, and, frankly, the money received would help us immeasurably.

Recently, our National President, Mrs. William H. Evans, attended the 18th Clinical Convention of the American Medical Association. Her presentation to the House of Delegates evoked the following comment: "This reference committee was impressed with the presentation in which was described the effective work being done by the members of the Woman's Auxiliary and the great potential for additional undertakings. . . ." The House of Delegates adopted this resolution unanimously: "BE IT FURTHER RESOLVED, that the House of Delegates strongly urge each state and local medical society to support fully, and to aid and encourage the Woman's Auxiliary to the American Medical Association in all its endeavors, particularly in the JOINT HUSBAND-WIFE MEMBERSHIP PROJECT."

We know we can contribute substantially to the medical association in the field of community service and public relations, but we do need increased income. The members who are willing to do the work are also carrying the financial support of the organization. We desire to have the expenses of our auxiliary's activities shared by ALL the doctors' wives in the most economical way, and the strength that comes with increased numbers.

Recently, the House of Delegates of this medical society came to our rescue. For a number of years we had been receiving the sum of $400 for advertising in our "Connecticut Quarterly" from the Connecticut Medical Service. We used this money to help defray the expenses of publishing our four issues. Without this money we would not have been able to meet our expenses. When this society terminated its sponsorship of Connecticut Medical Service, because of our loyalty, naturally, our state auxiliary brought the matter to the attention of our Advisors. These kind gentlemen took the matter up with the proper committee, and the recommendation to give us $400 for future use by the medical society was approved. We were delighted with the decision.

During this year I presided over five board meetings and the School of Instruction.

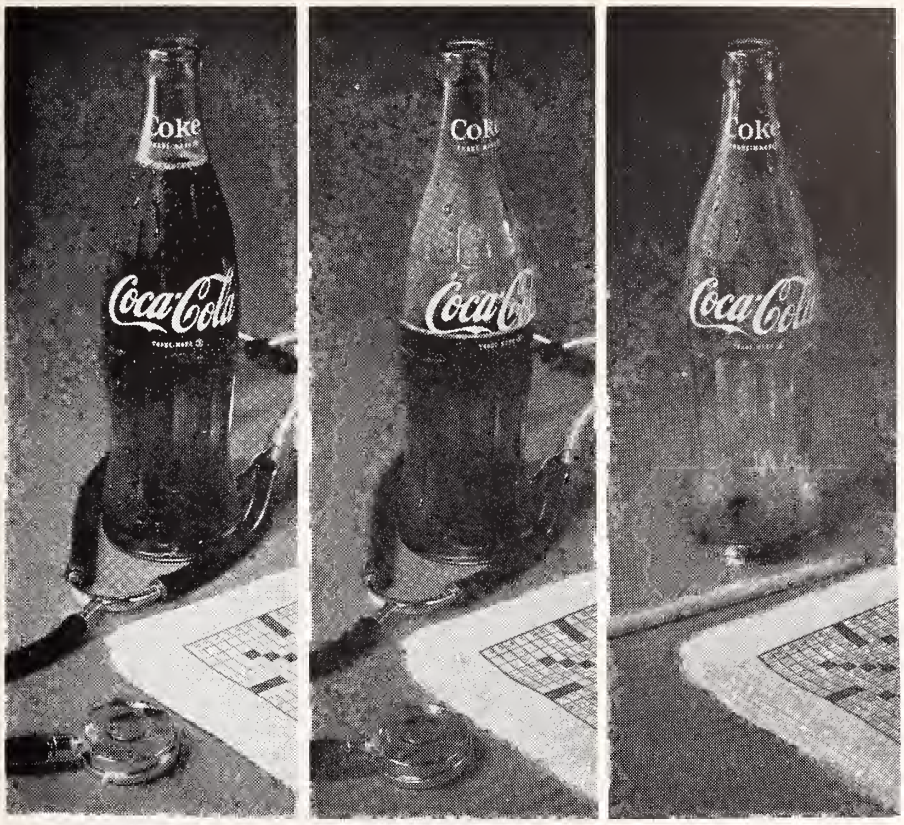
In June 1964, our President-Elect, Mrs. William R. Richards, and I attended the forty-first Annual Meeting of the Woman's Auxiliary to the American Medical Association in San Francisco. At this convention it was my pleasure to be appointed official timekeeper. I also read the report of our past state president. My report of this meeting appeared in our *"Connecticut Quarterly"*.

In September 1964, our AMA-ERF Chairman, Mrs. Irving H. Krall and I attended the workshop of the AMA-ERF Committee of the Eastern Region as guests of the American Medical Association, in New York.

In October, 1964, our President-Elect and I attended the Conference of the Woman's Auxiliary to the American Medical Association in Chicago. I was again appointed official timekeeper.

In November 1964, at our Semi-Annual meeting at the Hotel America, Hartford, we had as our guests the Presidents and Presidents-Elect of the Massachusetts and Rhode Island State Medical Auxiliaries. The Eastern Regional Chairman of AMA-ERF was also with us. Our main speaker was Mrs. Richard A. Sutter, President-Elect of the Woman's Auxiliary to the American Medical Association. An interview on a local radio station during the morning of our meeting day was arranged for her.

As part of the program after the luncheon, a group of members of the New London County Auxiliary read the play, "To Temper The Wind". This play tells the story of the important role Homemaker Service offers a community when families are confronted with illness. By presenting this play, we took advantage of informing our members of the services available. For the lighter side, our state chairmen modelled beautiful furs and hats.



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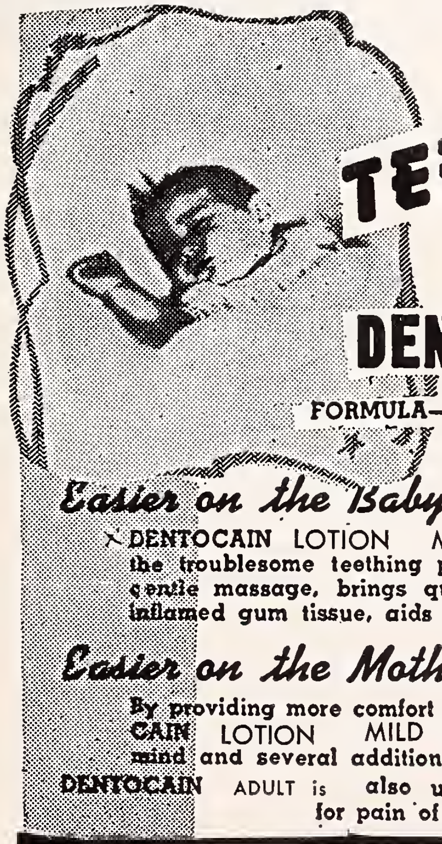

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It was my privilege as president to represent our auxiliary at the Eastern States Regional Conference for Officers of Women's National Organizations at the resident's Committee for Traffic Safety in support of the Committee's Action Program, in New York.

As I mentioned earlier, I represented our auxiliary at Governor Dempsey's Civil Defense Conference for Women at the University of Connecticut, in October, 1964.

During the year I represented our state auxiliary at conferences of the Massachusetts, Rhode Island, and New York State Medical Auxiliaries.

I attended at least one function of five county auxiliaries, and in three of our counties, I attended two functions.

During the year I wrote to Senators Ribicoff and Dodd on legislative action, and to our Connecticut legislative body on bills pertaining to the mental health program, and to fluoridation. I also attended meetings of the Steering Committee of the Connecticut Service Council, WNHC Stations, and the Connecticut Health League.

During this year I tried to interest the women of Tolland County to form an auxiliary and to join our ranks. I wrote personal letters to each woman, and arranged for her to receive the first issue of our new "National Bulletin" free of charge. If these doctor's wives were to form an auxiliary we would then have 100 per cent county participation.

Among our membership two women are on the board of the national auxiliary. Mrs. Morton Arnold of Windham County is a Director, and Mrs. Norman Gardner of Middlesex County is Program Chairman.

Our Annual Meeting will be held on April 28, 1965, at the Hotel America. Our speaker at the morning session will be Dr. Wilfred Bloomberg, Commissioner of Mental Health of Connecticut. His topic will be, "Planning Project". We are indeed fortunate to have Dr. James Z. Appel, President-Elect of the American Medical Association, as our guest at the luncheon the same afternoon. Before the installation of new officers, two of our Hartford County members will render a duet piano concert.

The auxiliary appreciates the opportunity to submit material for publication in CONNECTICUT MEDICINE, and extends its gratitude to Dr. Louis H. Nahum, Editor, and the staff for its cooperation.

We want to thank Dr. Ralph L. Gilman, President of the Connecticut State Medical Society for his many courtesies extended to us. To Doctors Orvan W. Hess, Chairman, Denis S. O'Connor and Morris P. Pitock, of the Advisory Committee, we say "thank you", and want you to know how appreciative we are of your support.

Dr. William R. Richards has been most generous with his time and assistance for which we are grateful. We would be remiss if we did not thank Mrs. Josephine Lindquist, Assistant to the General Manager, and the staff of the Connecticut State Medical Society for their helpfulness and time expended on our behalf.

In conclusion, may I thank you sincerely for your kind invitation to be with you today to report on the activities of the Woman's Auxiliary to the Connecticut State Medical Society, and to quote the following: "A man must share the troubles of his community. . . . He who shares in its troubles is worthy to see its consolation." Taanit, 11a.

MRS. CHARLES M. KRINSKY

No Cold Cure In Sight

The cure for the common cold still seems distant.

Dozens of different viruses can cause a cold, and they appear and disappear in various areas with wild irregularity.

"The best treatment for the age-old 'hah-chooo' still remains 'gesundtheit'," says an editorial in the current Journal of the American Medical Association.

A report in the same issue illustrates the discouraging array of viruses faced by medical researchers.

At Baylor University College of Medicine, Houston, Texas, doctors isolated 22 separate viral agents among 105 college and medical students with upper-respiratory-tract infections during the winter of 1963-64.

Nineteen of these viral agents were rhinoviruses, one was an adenovirus, and two were herpes simplex viruses. Nine different rhinovirus serotypes were represented, including four newly identified. More than 80 of these serotypes have been identified in this country and Great Britain.

The rhinoviruses seem to be an important cause of respiratory disease in young adults. In children, however, respiratory syncytial virus and parainfluenza viruses are the most common cause, and among military recruit groups, the adenoviruses are a significant cause of pneumonia, the report said.

"It becomes increasingly apparent that there is no simple answer," the report said. "Control of rhinovirus infections by development of a vaccine does not seem likely in the near future."

The study is by C. Alan Phillips, M.D., Stuart Riggs, M.D., Joseph L. Melnick, Ph.D., and Catherine A. Grim, all of the World Tealth Organization International Reference Center for Enteroviruses, Department of Virology and Epidemiology, Baylor University College of Medicine, Houston.

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Tetanus

Are you and your family immunized against tetanus?

If not, you are running an entirely unnecessary risk of serious illness, perhaps even death, from this serious disease.

With the coming of spring and a return to gardening and other out-of-doors activities, the risk of tetanus increases. The spores can be found in the cultivated soils of most areas of the United States. They can be picked up by plants or animals, and introduced into the victim's body by something as inconsequential as the scratch of a thorn or an insect bite.

While millions of babies and members of the armed forces have been innoculated against tetanus, the fact remains that about three-fourths of the adult population is lacking in immunity. The protection offered by immunization wears off after a few years and must be restablished by booster shots, which most people fail to get.

Once they enter the body, tetanus spores "hatch" into tiny, microscopic bacteria, which begin to multiply. In the process, they liberate one of the deadliest of all poisons which attacks the nerve centers causing convulsions and muscle spasms — some so severe that victims have been known to fracture a vertebra.

Usually the first nerves affected are those of the head and neck which control the chewing muscles. These turn rigid with spasm, giving the disease its familiar name—lockjaw.

In a clean, free-bleeding cut tetanus spores usually are washed out. Or if they do sprout into bacteria, the microorganisms may be destroyed by oxygen in the blood. But when blood flow is slight, as in a deep puncture from stepping on a nail or in crushing wounds, or when the spores are insulated by imbedded dirt and debris, the tetanus bacteria may gain a deadly foothold within the body. This is because tetanus bacteria thrive in the absence of air.

No antibiotic or other drug can halt a full-blown case, and about 60 per cent of those afflicted by the disease die.

By means of immunization, tetanus is almost completely preventable. Protection should start early—one and a half to two months after birth—for the scrapes and falls of childhood offer tetanus many opportunities. In children, as well as adults, immunity is initiated by a series of three shots, spaced over eight weeks, and followed by a booster dose within six to twelve months. Thereafter, immunity is maintained by boosters every five years.

Don't take a chance with tetanus. Call your doctor and make an appointment to have your family immunized.

Medicine's Mercifully Brief History

On a less-than-serious note, an article in the current Journal of the American Medical Association summarizes "The Mercifully Brief History of Medicine":

"Medicine began with the dawn of history," writes author Richard Armour. "In fact, it began shortly before dawn, at about 3 a.m., when the first Stone Age doctor was routed from his bed by a patient who thought he was dying.

"Transportation being none too good (this being before the invention of the wheel), by the time the doctor arrived, the patient was well."

Armour romps through the rest of medicine's history with similar abandon. He is the author of the book, "Through Darkest Adolescence: With Tongue in Cheek and Pen in Checkbook," (McGraw-Hill, New York, 1963).

"During the Stone Age the most common complaints were gallstones, kidney stones, and stumbling over stones. Surgery was in its infancy, largely because of the difficulty of making an incision with a sharpened stone and of performing a suture with a stone needle.

"When a surgeon decided not to operate, everyone breathed a sigh of relief, especially the surgeon and, if he was still alive, the patient."

"Roman medicine made a great contribution in the field of sanitary engineering and public health," Armour said. "The Romans drained swamps, built aqueducts, constructed sewers, and killed off enough people in surrounding countries to keep cities from becoming overcrowded."

Medicine took an unexpected turn in Middle Ages when it became affiliated with astrology.

"No one would swallow a pill without first checking to see whether the stars were in a favorable position, and on a cloudy night this could be difficult."

During the modern era the progress of medicine has been rapid:

"In England, Joseph Lister made operations safer by getting surgeons to wash their hands. The practice spread to the U.S., where it was hailed by the manufacturers of soap.

"In France, Louis Pasteur discovered how to keep food from spoiling and thereby made it necessary to eat leftovers."

In recent years, there have been marvelous developments in medicine:

"Salk and Sabin have practically eliminated poliomyelitis, at least in those who are not too busy to drop in for the vaccine."

With "x-rays, wonder drugs, gray ladies, and self-sealing return envelopes for the paying of overdue accounts," medicine has come a long way since the Stone Age.

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Side Effects: Agranulocytosis, constipation, dizziness, dysuria, headache, hyperglycemia, hyperuricemia, impotence, leukopenia, muscle cramps, nausea, postural hypotension, purpura, thrombocytopenia, transient myopia, urticaria, vomiting and weakness.
Average Dosage: One tablet (100 mg.) daily with breakfast.
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For full details, see the complete prescribing information.

*Dorhout Mees, E.J., and Geyskes, G.G.: Acta med.scandinav. 175:703,1964.

Photos: A 59-year-old woman with hypertensive cardiovascular disease and edema resistant to low-salt diet and bed rest. The patient lost 8½ lbs. in one week with a single tablet daily of Hygroton, brand of chlorthalidone.

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Letters To The Editor

To the Editor

RE: EDITORIAL vs. TEXTBOOK

In reading the March 1965 issue of *Connecticut Medicine,* my attention was immediately drawn to your editorial on Nuclear Medicine: Scintiscanning. I feel compelled to comment—and I will try to be brief—on some extremely important omissions, partial truths, as well as certain inaccuracies in an editorial which purportedly presents the current status of scintiscanning in nuclear medicine.

Unquestionably, the greatest omission is your failure to mention the important position of the non-beta emitting, low energy gamma emitting, short-lived radionuclides. Specifically Technitium 99m and Iodine 125. The fantastically high count rates made available by the low radiation dosimetry to the total body as well as critical organs together with the recent introduction of the newer low energy focusing collimators allowing higher percentage transmission without loss of resolution are already allowing many of us to scan patients much more quickly with our available equipment and with less discomfort to the acutely ill patient. The Pertechnetate brain scan is accomplished in eight minutes with a three inch scanner in contra-distinction to the 30 minutes required for brain scanning utilizing either Iodine tagged human serum albumin or Mercury labeled Neohydrin. Similarly technitium sulfur colloid scans are giving a good picture of the active bone marrow. 10 mcs. tracer doses allow scan speeds of up to 96 inches per minute. Tc 99m Pertechnetate placental scanning with tracers of 1 mc. not only accurately localizes the placenta but accurately portrays dilated pelvic, perivesicular and vulvar veins as well. Polyhydramnious presents a characteristic pertechnetate scan.

Relative to the efficiency of brain scanning no diagnostic radiological test is 100 per cent accurate. In brain tumor localization of necessity the blood brain barrier to these larger molecules must be reduced. This is not true in the more slowly growing tumors nor in those in which gliosis is a predominant component. However, a review of the work of ten of our leading teaching institutions reveals that scanning is accurate in 92 per cent of menigomas, 79 per cent of metastatic lesions, 66 per cent of astrocytomas, 94 per cent of glioblastomas, 89 per cent of ependenomas and 40 per cent of pituitary tumors. Thus in summary, brain scanning is perhaps 80 to 90 per cent diagnostically accurate for brain tumors.

It should also be emphasized that in the visualization of non-neoplastic lesions there are certain patterns that together with the history allows the radioisotopologist to make a presumptive diagnosis of the histology with a high degree of accuracy. It is in this area that the correct operation of the scanner is most important for the normal anatomic land marks should not be suppressed out in so far as many infarctions are no denser than the normal vascular areas. In subdural hematomas it is well known that the radioactivity is not in the fluid but concentrates in the membrane so therefore in those cases in which scanning is carried out before the membrane forms it cannot be expected to be positive. With proper history it is not difficult to differentiate intracranial hematomas from neoplastic disease, either primary or metastatic. If the neurological condition is not an emergency the brain scan may be repeated—infarcts and contusions will disappear—neoplastic disease will not. Subdural hematomas once positive do not go away but they present a characteristic pattern. Arterial venous malformations are positive due to their large abnormal blood pool. However for detection they must be scanned very soon after the tracer injection. In children a porencephalic cyst also presents a characteristic scan pattern. In the presence of a negative brain scan our neurosurgeons then go on to the standard radiologic diagnostic techniques: namely, angiography and or encephalography realizing full well their much higher degree of morbidity and possible mortality.

The current detector of the digital autofluoroscope being developed by Dr. Merril Bender at Roswell Park Memorial Institute at Buffalo contains 260 sodium iodide crystals not 294. I feel it should be emphasized that this instrument is certainly in the research phase of development. While it does present certain physical advantages over the Anger camera it is not yet commercially available nor will it be in the foreseeable future. The electronics of this instrument are currently being developed by Baird Atomic in Cambridge, Massachusetts. A commercial model of Hal Anger's camera is available from Nuclear-Chicago at the present time. However it does not compare in resolution with the experimental material already presented by Dr. Bender. Certainly the development of the image converter scintillation camera by Dr. Michael Ter Pogossiun at Washington University School of Medicine, St. Louis, Missouri, which may in the final analysis supplant both of the above cameras in so far as it produces rapid visualization and location of gamma emitting isotopes in 2-3 minutes must also be mentioned for the sake of completeness.

While scintiscanning has only made its appearance in certain institutions during the past year it has actually made rapid clinical progress during the past decade. I am sure we do agree that especially with the greater utilization of the short-lived radionuclides and complete conversion from the focusing collimator to camera techniques; this rate of growth within the field of diagnostic radioisotopology will be maintained.

Sincerely yours,

Kenneth R. Kaess, m.d.
Director.

N.B. You will note I withheld comments on your references to dynamic phase analysis as this would require another letter. However, I am certain you are also aware of the valuable contributions being made to clinical medicine by the radioisotope renogram as well as the extremely attractive clinical possibilities in coronary blood flow measurement, cerebral blood flow measurement, and gammacardiography.

(An editorial is not a text-book. A text-book on SCINTILLATION SCANNING IN CLINICAL MEDICINE by James L. Quinn, III, M.D. was reviewed by Dr. Richard P. Spencer in the April issue of Connecticut Medicine, *vol. 29, page 304, 1965, Ed.).*

To The Editor:

Even though Parnate has been withdrawn from the market, I would like to recount the symptoms and signs of a patient that I myself observed.

Case report:

1. A 46 year old executive while taking Parnate, 10 mg. q.i.d., had a light lunch consisting of a glass of milk and a slice of "sharp, strong Vermont American cheese, approximately 2" x 2" x 1" in size, with two unsalted crackers." He finished this light meal at approximately 12:30 P.M. and at about 1:15 P.M. while driving back to work noticed a peculiar pulsating, "butterfly sensation" in his stomach, followed in a few moments by "painful pounding sensations up the back of my neck, face, gums and teeth." There were no chest or arm pains throughout the episode despite a well documented history of angina pectoris. He became very apprehensive and visited the factory nurse who administered "mints and Alkaseltzer". She also put ice packs on his head and neck but he stated that "Whether I sat up, stood up or lay down, the pounding in my head continued unbearably". There was some blurring of vision but no particiular weakness and no nausea.

2. I saw him at home at 3:00 P.M. He was flushed and very apprehensive. The blood pressure was 250/120, the pulse 76 and bounding. Three grains of sodium secobarbital were given orally with ¼ grain of codeine sulfate. It was not until about 6:00 P.M. that the severe pounding headache finally disappeared. On the following morning his BP was 160/90. He felt well enough to go to work, although a soreness persisted in his head for two to three days.

It is now known that the hypertension was caused by a pressor agent tyramine found in strong aged cheeses. Tyramine is destroyed by monoamine oxidase but this reaction is inhibited by tranylcypromine (Parnate).

Sincerely,

L. A. Chotkowski, m.d.

Kensington, Conn.

To The Editor

On April 7, 1965 at noon, 30 physicians of a newly organized Physicians for Automotive Safety made a "dignified protest" before the 1965 International Automobile Show at the New York Coliseum. Fourteen specific objections to current automobile design were indicated on the placards which the physicians carried. Since the protest, the response from the public and our fellow physicians reflects sentiment that our action was long overdue. Despite past intensive programs directed at control of the environment (the highway) and the host (man), little attention has been directed towards preventive countermeasures for the specific agent (the automobile). Defective automobile design is responsible for much of the epidemic injury, disfigurements, and disabilities.

All the previous resolutions of the American Medical Association and the American College of Surgeons asking that the industry make a safer car have been almost completely ignored. There will be no conflict with the regular medical organization activities on automotive safety, and the Physicians for Automotive Safety will cooperate to reinforce the mutual objective.

The Physicians for Automotive Safety, as a smaller and more flexible organization, will direct programs specifically to effecting occupant protection in motor vehciles. Physicians for Automotive Safety represents the first attempt at organization of the practicing medical profession to cope with a known mechanical epidemiologic agent. The nature of the present epidemic clearly justifies this approach.

Membership inquiries and suggestions for future action should be directed to Dr. Aronld Constad, Secretary-Treasurer, 527 Morris Avenue, Springfield, New Jersey. Basic membership fee is $5, contributing membership $15, sustaining membership $25 per year. Hopefully physicians from every section of the country will join to give meaningful influence for this new medical group.

Sincerely yours,

Seymour Charles, m.d., *President*
Physicians for Automotive Safety
Newwark, New Jersey

Leo Mayer, m.d., *Vice-President*
New York, New York

Letters to the Editor are welcome and will be published for informative and educational purposes as space permits. As with other material which is submitted for publication, all letters will be subject to the usual editing. Address all correspondence to: The Editor, Connecticut Medicine, *160 St. Ronan Street, New Haven, Connecticut, 06511.*

AROUND THE STATE

New Haven County

Board Of Governors
New Haven County Medical Association
April 22, 1965

The first meeting of the new Board of Governors for 1965-166 was held at the Colonial House in Hamden on April 22, 1965 at 4:45 P.M.

Dr. Luca E. H. Celentano was elected Chairman of the Board for the year. The newly elected members to the House of Delegates from New Haven County were introduced and welcomed as members of our Board: Michael Dzubaty, West Haven; Joseph Fraknoi, Wallingford; Gioacchino S. Parrella, Milford; Harold Stern and Frederick H. Treder, New Haven.

Committee appointments, routine business of the organization, and a review of the Agenda of the House of Delegates Meeting of the Connecticut State Medical Society, April 27th, made up a large part of the session which was followed by the usual social hour and dinner.

Dr. Max Caplan, A.M.A. Delegate, discussed pending national legislation, in terms of Medicare, during dinner.

The meeting was very well attended.

Dr. Allan J. Ryan of Meriden is the author of a new column entitled "Sports and Health" which will appear three times a week in the *Meriden Record.*

The column will discuss health problems as they relate to sports. It will cover such diverse subjects as exercise and physical fitness; special health problems of professional athletes, the relation of swimming, skin diving, and other aquatic sports to health; physical recreation for persons over 50; special sports events, such as the Olympic games; sports for the high school and college athlete, and many other subjects.

Dr. Ryan has been a member of the American Medical Association's Committee on Medical Aspects of Sports since its inception ten years ago, and he is also a member of its new Committee on Exercise and Fitness. He is a Fellow and past president of the American College of Sports Medicine. His book, "Medical Care of the Athlete," was published by McGraw Hill in 1962.

The New Haven Department of Health has been designated as a "Yellow Fever Vaccination Center" by the U. S. Public Health Service effective May 1, 1965. Dr. John B. Atwater, Director of Public Health in making the announcement said "A demand for yellow fever vaccination has been created by increased travel between foreign countries, such as South America, Africa, and the United States. The world has become smaller with the jet age and large numbers of persons, including diplomats and students enter and leave the country frequently. Up until now persons requiring yellow fever vaccine had to travel to Hartford or to New York to a United States Public Health Clinic Center."

The new Yellow Fever Clinic will be conducted at the New Haven Department of Health's Preventive Medicine and Immunization Clinic located at 169 Church Street. The vaccine will be given on Thursday afternoons by Appointment Only. As with other immunizations given by the Department of Health, there will be no charge for this service. For an appointment call 562-0151, Ext. 321.

All persons planning a trip to countries which require a certificate of vaccination against yellow fever are required to be vaccinated for active immunization against the disease before their trip. This includes all children six months and older.

The United States government requires all returning travelers to have been vaccinated against smallpox. In addition several types of immunization are often necessary to meet requirements of various countries. Persons planning trips should consult with their private physicians well in advance of their trip to plan their immunization schedule.

Dr. Atwater strongly urges all foreign travelers to have typhoid, paratyphoid, and tetanus immunization as a safeguard against these diseases which are a hazard in many parts of the world.

News From Yale University School Of Medicine

President Kingman Brewster, Jr., today announced that Mrs. Eleanor N. Dana of Wilton, Connecticut, and New York City has given $500,000 to the Yale School of Medicine toward construction of a new reasearch center devoted to the problems of "high risk" babies.

The new unit, to be called the Perinatal (literally "around the time of birth") Research Center will be one of the most comprehensive of its kind in the United States. Yale investigators representing a variety of medical specialities will be working on the causes of perinatal mortality which accounts for more than 175,000 deaths a year, a death toll surpassed only by heart disease and cancer.

Intensive care and research will be provided for the "high risk" babies, those newborn infants who do not have as good a chance for survival as a normal baby unless they get very special care. The studies will cover every development relating to the infant and the mother.

Fairfield County

Dr. William B. Terhune founder of the Silver Hill Foundation was honored for his 50 years of medical practice by the Connecticut Academy of General Practice at its annual scholarship fund ball recently at the Stratfield Motor Inn in Bridgeport.

Dr. Bruce R. Valentine of Abbington, president of the medical organization introduced Dr. Terhune stating that the academy wished to express its appreciation and gratitude for all he had done during the past 50 years in advancing the cause of medical science, his whole-hearted devotion to the interests of all patients, and particularly his contribution to psychological medicine.

Dr. Sonnenblick Wins Award For Heart Research

Dr. Edmund H. Sonnenblick of the National Heart Institute in Bethesda, Maryland, a former West Hartford resident, has been named 1965 winner of the Society for Experimental Biology and Medicine's Meltzer Award.

The award cites his research on the mechanics of the heart muscle. His electron microscope studies have provided an explanation of how the heart muscle can alter its strength of contraction.

Dr. Sonnenblick, son of Ira Sonnenblick of Cedar Ledge Road, West Hartford, is a graduate of Wesleyan University and Harvard Medical School, and trained at the Columbia Presbyterian Medical Center. He is presently the attending cardiologist at the National Institute of Health.

Dr. Sonnenblick is married to the former Linda S. Bland of Mountain Road, West Hartford. The couple has three children.

News From Connecticut State Health Department

The 1965-66 plan for the construction of mental retardation facilities was approved today by the State Public Health Council, according to Franklin M. Foote, M.D., Connecticut State Commissioner of Health. The Council approved the plan on the recommendation of the State Advisory Planning Council for mental retardation facilities construction.

The plan, the first of its kind in Connecticut, is available for inspection and comment of all interested parties at the offices of the state department of health, 79 Elm Street, Room 504, Hartford.

The plan indicates the manner in which the state health department will recommend allocation of approximately $100,000 in federal grants for the construction and improvement of Connecticut's mental retardation facilities for the 1965-66 fiscal year.

Under the Mental Retardation Facilities Construction Act—(88-164) of 1963—money is allocated to sponsors of eligible projects of a non-profit or governmental nature which offer a community service without restriction to color, creed or economic status.

The Singing Doctors

How can a county medical society of barely 150 members grant scholarship loans to three dozen young doctor-to-be?

The Greene County Medical Society, Springfield, Mo., is doing precisely that—through the talents of its "Singing Doctors." The group's three record albums of "Medical Hit Parade" satire have now grossed over $75,000, with all proceeds going to the Society's scholarship foundation. This summer, additional medical students will be selected to receive aid, and the Society's long-range goal is to educate hundreds of deserving young men and women. All students helped to date are Americans, with the exception of one Iranian youth.

The albums—available exclusively by mail from the Society's headquarters in the Professional Building, Springfield, at $3.25 each, postpaid—are the brain child of a 41-year-old surgeon, James T. Brown, M.D., who composed the 60 parodies contained in the three volumes and organized five of his fellow physicians into the now widely known group. Among their "hit parade" selections are "Black and Blue Cross," "Hemorroids," "I'll Try to Say No" (the "house-calls" song), 'AFL-CIO-AMA," "The Menopause," "Medical School Memories," "Halitosis Beats No Breath at All," and songs dealing with each of the specialties.

The Singing Doctors have staged their one-hour musical show in person before 40 state and national medical meetings, according to Society president William H. Snead, M.D., and they appeared last January on television's popular "I've Got a Secret" program.

New York Pediatric Surgeons Association

645 Ocean Ave., Brooklyn, New York 11226

Formation of "The New York Pediatric Surgeons," the first Regional Chapter of the Section on Surgery of the American Academy of Pediatrics was announced by Dr. Thomas V. Santulli, President of the Executive Board. Dr. Santulli is an Associate Professor of Surgery at the Columbia College of Physicians, and Director of Pediatric Surgery at Babies Hospital of the Columbia Presbyterian Medical Center. Organized initially in 1960, the group was officially accredited as a Regional Chapter at the March 22, 1965 meeting of the American Academy of Pediatrics.

The purpose of this group is to promote and stimulate research and clinical study among physicians engaged in the practice of pediatric surgery, thereby advancing and improving the surgical care and treatment of children; and to stimulate further studies and investigations toward the attainment of this goal.

In addition to Dr. Santulli, the Chapter's Executive Board is composed of Dr. Bertram D. Cohn, Vice President; Dr. Elizabeth Coryllos, Secretary-Treasurer; Dr. S. Frank Redo, and Dr. Elliott S. Hurwitt. Dr. Lawrence Pickett is the representative from Connecticut; Dr. Anita Falla from New Jersey; and Dr. C. Everett Koop and Dr. Harry Bishop from Pennsylvania. The newly-elected active members are Dr. Peter Kottmeier and Dr. Irwin Krasna.

Program Could Damage Medical Care

The recently proposed national program to "conquer" heart disease, cancer and stroke could seriously damage the present system of American medical education and medical care, the American Medical Association asserts in a critique published in the current Journal of the AMA.

The whole proposal evolves from two undocumented and controversial assumptions, according to the AMA. These are : (1) that American physicians are unable to keep abreast of and apply new medical knowledge, and (2) that more money should be spent on medical research to find new concepts applicable to the treatment of disease. If data are available to substantiate either assumption, the medical organization asked that it be made available to the medical profession and the public.

Recommendations for a federally financed national program were worked out over a period of several months by the President's Commission on Heart Disease, Cancer and Stroke, a 28-member body of laymen and physicians headed by Dr. Michael DeBakey of Baylor University, Houston, Tex.

When President Johnson appointed the commission, early in 1964, he charged it with the task of finding ways to reduce "the incidence of these diseases through new knowledge and more complete utilization of the medical knowledge that we already have."

The report of the commission in December raised many more questions than it answered, says the AMA. In essence, the medical organization declares, the commission proposes to reorganize the American system of delivering medical care to the patient and the way in which the American physician and scientist are educated.

According to the commission report, the frequency of heart disease, cancer and stroke could be reduced by adopting 35 recommendations and 11 separate proposals for legislation. While these cover nearly every facet of medicine and related activities, the principal features of the multi-billion-dollar program are proposals for:

1. The creation of 60 regional complexes for care and clinical investigation of patients with heart disease, cancer and stroke.

2. Research institutes within existing hospitals and medical schools, to investigate both disease-related and noncategorical problems.

3. The establishment of 550 diagnostic and treatment stations for the three diseases.

4. Increasing manpower in both clinical and research medicine by expanding current programs supported by the federal government and creating new ones.

Legislation generated by the report is already in Congress and hearings have been held by a Senate committee.

"The commission is, in effect, taking the position that it is impossible to achieve optimum control of heart disease, cancer and stroke without a broad and sweeping revision of our present sytsem," the AMA points out. It is this system, it adds, that "although always subject to improvement, has produced the best medical education in the world, the most sophisticated diagnostic and therapeutic advances, and the most advanced understanding and treatment of disease processes."

Stating that the existing medical system offers every reasonable expectation for further advances, the AMA challenges the commission and its congressional supporters to show that the proposed changes will better and not damage the system.

The federal government already is responsible for serious fragmentation of U.S. health care services by "the development of multiple non-coordinated health care programs administered by multiple federal agencies. . . ."

The report of the commission, setting forth a new health service program, can only compound the problem, in the eyes of the AMA. The commission's recommended program, it says, totally disregards traditional relationships and responsibilities of state and local health departments, voluntary agencies and communities in favor of a "centrally planned" approach to medical care.

In questioning the commission's premise that an outpouring of federal funds for "research" will lead to "conquest" of disease, the AMA observes that money does not buy knowledge. Crash programs requiring huge expenditures — such as the Manhattan Project — are indicated only when basic knowledge and theory are well advanced.

While money may fill laboratories with scientists, the medical organization says, it cannot significantly increase the always small number of creative scientists who advance basic knowledge through their individual insights. This relative scarcity of creative scientists "makes the program advanced by the commission a false and hollow expectation."

Doctor's Office

William P. Canty, M.D., announces the opening of an office for the practice of obstetrics and gynecology at 110 Church Street, Putnam.

Frank M. Castiglione, M.D., announces the removal of his office for the practice of dermatology to 459 Orange Stre, New Hatven.

Joseph A. Havlicek, M.D., announces that he will assume the practice of the late Dr. William Wrang at 3 McDonald Place, Middletown.

Julius Landwirth, M.D., announces the opening of an office for the practice of pediatrics with special interest in adolescent medicine at 380 Boston Post Road, Orange, on July 1st.

Georgino R. Reyes, M.D., announces the opening of an office for the practice of medicine, specializing in pediatrics, at 229 Farmington Avenue, Hartford.

Dr. Edward P. Wallace, M.D., announces that Dr. William Russell has joined him and Dr. Irwin B. Bernhardt in the practice of pediatrics and pediatric allergy at 71 Parker Avenue, Meriden and 181 North Main Street, Wallingford.

Annual Report On Medical Licensure

The 63rd annual report on medical licensure statistics appears in the current Journal of the American Medical Association.

A total of 7,911 physicians were newly added to the licensed medical profession in the U. S. in 1964, according to the report by the AMA Council on Medical Education.

There were 6,605 newly licensed U. S. and Canadian medical school graduates and 1,306 graduates of medical faculties in other countries. Newly licensed foreign medical graduates have gradually decreased each year since the high of 1,626 in 1959. In recent years, about one quarter of foreign-trained graduates issued first licenses have been U. S. citizens who attended medical schools outside the U. S. and Canada.

A total of 17,885 licenses to practice medicine and surgery were issued during 1964 by 55 authorized boards in the U. S. and its territories. This total included first licenses for new physicians, licenses for physicians moving to other states, and licenses for foreign-trained physicians.

Of all licenses issued during 1964, 7,166 were granted after successful written examination and 10,719 by reciprocity and endorsement of state licenses or the certificate of the National Board of Medical Examiners.

As of December 31, 1964, there were 284,271 physicians in the U. S. (excluding 1,740 temporarily in other countries).

Licensing board examination failures in 1964 totaled 1,181. The percentage of failures in the written examinations of graduates of approved U. S. medical schools was 1.7; of graduates of approved Canadian medical schools, 7.8 per cent failed. Graduates of schools of osteopathy admitted to medical licensure examination in several states had 9.4 per cent failures, and 31.8 per cent of foreign-trained physicians examined for medical licensure failed. The total percentage of failures was 13.4 per cent, about the same as 1963.

A second section of the Council's report pertains to examination results and endorsement of credentials sponsored by 24 boards of examiners in the basic sciences in 23 states and the District of Columbia.

A third section deals with examinations given by the National Board of Medical Examiners. In 1964, the District of Columbia, Guam, Puerto Rico and 42 state boards issued 4,730 licenses to practice medicine on the basis of endorsement of the National Board certificate.

The fourth and concluding section of the report summarizes results of examinations given to foreign-trained physicians by the Educational Council for Foreign Medical Graduates.

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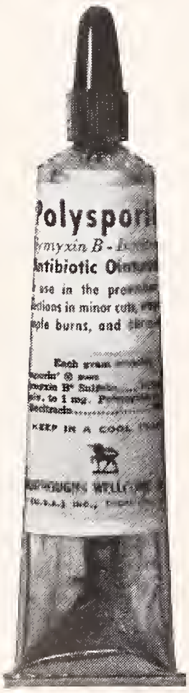

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Special Notices

COURSE IN LARYNGOLOGY AND BRONCHOESOPHAGOLOGY

September 20 to October 2, 1965

The Department of Otolaryngology, College of Medicine of the University of Illinois at the Medical Center, Chicago, will conduct a postgraduate course in Laryngology and Bronchoesophagology from September 20 to October 2, 1965. Interested registrants will please write directly to the Department of Otolaryngology, College of Medicine of the University of Illinois at the Medical Center, Postoffice Box 6998, Chicago, Illinois 60680.

FIRST NATIONAL CONGRESS MEDICAL ETHICS AND PROFESSIONALISM

October 2-3, 1965, Chicago, Illinois

The American Medical Association is sponsoring a National Congress on Medical Ethics and Professionalism at the Drake Hotel in Chicago on October 2-3, 1965.

Any physician interested in attending this meeting should write to James H. Berge, M.D., Chairman, Judicial Council, American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610, for detailed information.

Accommodations at the Drake are limited and therefore reservations will be accepted on a first-come first-serve basis.

DISASTER MEDICAL CARE CONFERENCE

October 30-31, 1965

The 16th National Conference on Disaster Medical Care will be held at The Drake in Chicago, October 30-31, it was announced by Albert H. Schwichtenberg, M.D., chairman of the American Medical Association's Council on National Security.

Four symposiums — Care of the Traumatized Patient, Disaster Communications, Disaster Planning in Industry, Disaster Medical Resources—will be held during the two-day period to develop the conference theme of unified health resources planning for disaster.

"The Red Cross in Disaster" will be the subject of a Saturday luncheon address by Robert F. Shea, Washington, D.C., vice president, American National Red Cross. James Z. Appel, M.D., Lancaster, Pa., AMA president will address the conference Sunday morning.

Three representatives of the federal government will conclude Saturday's discussions with a presentation of the role of "Federal Agencies in Disaster."

A special Disaster Tornado Report will be presented during a Sunday morning breakfast session. A second highlight of Sunday morning's session will be three separate workshops specifically designed for the physician, allied health worker, and community leaders.

Following a presentation of the New York method of planning for disaster, William T. Rumage, Jr., M.D., Louisville, Ky., program chairman, will deliver the conference summary.

For additional information write: Council on National Security, American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610.

Improved Physical Education Needed

Exercise can do more than merely build muscles. The right kind of exercises and games can help a child gain confidence, improve his skill in movement, and create interest in vigorous activity he can carry into adult life.

Regular exercise can also help to control obesity, delay degenerative disease, rehabilitate the ill or injured, and shorten recuperative periods.

This is why schools and colleges should offer a variety of activities in physical education programs, says the American Medical Association's Committee on Exercise and Physical Fitness.

The newly formed committee, consisting of physicians from throughout the nation, has issued the first in a series of reports on the value of physical activity and properly developed physical education programs.

"Students of both sexes need vigorous exercise," the report said. "Regular vigorous activity appropriate to age, sex, and health status is beneficial to everyone but a medically-excepted few. Continuing research shows that adequate exercise and sports activity contribute significantly to good health."

Even the handicapped can benefit from exercise, the committee said. Handicapped children should be encouraged to participate in games and exercises to the limit of their ability. Exercise not only speeds the rehabilitation of atrophied or unused muscles, but helps maintain organic fitness and gives a boost to the child's self-confidence, the report said.

"The development of emotional maturity can be aided by comprehensive physical education programs," the committee said. "Sports activities can help to fill a child's apparent need for adventure, train him to meet and accept challenges, teach him to accept limitations, and increase his self-esteem. As they gain skill and improve in fitness, boys and girls will want to test themselves under increasingly difficult competition."

There are problems, however, in developing adequate physical education programs.

In some situations, the committee said, varsity sports programs are given priority in attention and resources over intramural and physical education programs.

"This should not be the case," said the report. "Each is an important part of the program and should share equitably in facilities and teaching personnel."

Each school is responsible for teaching the value and appreciation of physical fitness, the committee said. The group said decreases in behavioral problems and increases in intellectual efficiency can be expected if the school's physical education program is a good one.

NEW BOOKS IN REVIEW

PHYSIATRIC DICTIONARY: GLOSSARY OF PHYSICAL MEDICINE AND REHABILITATON. By Herman L. Kamenetz, M.D., Charles C. Thomas Publisher, Springfield, Ilinois, 1965, 173 pp. $6.75.

Reviewed by: LOUIS H. NAHUM

This glossary describes the terminology used in the field of physical medicine and rehabilitation and will be of help to everyone in this field. It includes many terms used daily in the specialty but not found in large medical dictionaries.

It contains anatomic terms of the locomotor system, units, measures, abbreviations and even pronunciation of a few terms.

For this reason, it can contribute to correct speech and writing for physicians, physical occupation and corrective therapists, nurses, psychologists, social workers, medical secretaries, record librarians, orthotists, prosthetists and others dealing with the handicapped. It is excellently done by an author who is a scholar in the field.

CIBA FOUNDATION STUDY GROUP NO. 18: BRAIN THYROID RELATIONSHIPS, with special reference to thyroid disorders. Edited by Margaret P. Cameron, M.A. and Maeve O'Connor, B.A., in honor of Professor S. Artunkal. Little, Brown & Company, Boston, 1964. 117 pp. with 28 illustrations. $1.95.

Reviewed by: LOUIS H. NAHUM

This book contains the proceedings of a one-day study group organized and in honor of an eminent member of the Foundation's scientific advisory panel in this case, Professor S. Artunkal. There are six papers and discussions that follow in which twenty famous personages participated.

In Chairman Greene's opening remarks he points out that there is a clear relationship between the thyroid function and the workings of the mind. He believes a large number of people suffer from hypothyroidism, many of whom are not recognized because they do not conform to the usual textbook picture of the fat, pale, middle-aged woman with cold skin, slow movements and a slow mind.

There then follows a paper by G. W. Harris summarizing some recent research on brain thyroid relationship. He points out two important factors; hypothalamic control of anterior pituitary and thyrotrophic function, and the feedback action of thryoxin in the circulating blood upon hypothalamic centers.

Seymour Reichlin elaborates upon the hypothalamus in regulation of pituitary thyroid activity. Bengt Anderson clarifies the role of hypothalamic temperature in stimulating or repressing thyroid secretion. J. T. Eayrs describes the effect of thyroid hormones on brain differentiation. After this is a paper by Jolin Money and Viola Lewis on the intelligence quotient in treated congenital hypothyroidism.

Professor Artunkal then presented his psychological studies in hyperthyroidism. Like all symposia there is much discussion but little further clarification than is found in the formal papers. Since the neural mechanisms involved in the release of TSH secretion have only come to the fore in the last decade, much useful information will be found in this little volume of interest to all endocrinologists.

REHABILITATION MEDICINE. A Textbook on Physical Medicine and Rehabilitation. Second Edition. Howard A. Rusk and thirty-six collaborators C. V. Mosby Company, St. Louis, 1964. 668 pages and 210 figures $15.50.

Reviewed by: SIDNEY LIGHT

The word rehabilitation is a noun. Lexical considerations have fallen as a result of the wide distribution and acceptance of this book. There still remains the semantic problem of the new adjective as used in this work; whether and why electrodiagnosis, microwave diathermy, ultraviolet radiation and massage are correctly labelled rehabilitative medicine as their discussion would plead. But our chief criticism of this volume is that it is called a text book rather than the introduction, which it is. A textbook is a book that can be used as the principal basis for a course of study, a book that not only tells the reader that certain methods should be used in the care of patients but enough about those methods so that the student will be able to use them and know them, the way, for example, that several subjects are handled in this book: hemiplegia, poliomyelitis and the urologic management of paraplegics. Other subjects which receive very good but less informative treatment are low back pain, arthotics and arthritis. The chapter on psychiatric problems in relation to rehabilitation is superior and probably remains the best exposition of this subject available. Another excellent feature of the book is the collection of standard forms used for recording the history, physical examination and other records.

But a textbook it is not, unless you are willing to have your student believe the following complete paragraph in the chapter on pulmonary disease. "An electric muscle stimulator applied to the solar plexus to increase muscle tonus of the abdominal muscles is a useful device in improving exhalation" (page 560) . Nor would I want my student to commit to memory that, "Protein in the diet helps to prevent pressure sores" (page 169) . And how about this complete sentence from page 315: "The minimum erythema dose is determined by the blanching of the skin after twenty-four hours". In a textbook on rehabilitation is it proper to spend almost four pages on arthrogryposis and less than three on multiple sclerosis?

The second edition has 27 chapters, as did the first. There is no reference later than 1958, the date of the first edition, in twelve of the chapters of the second edition. This could be interpreted in one of several ways. For example, 45 per cent of the contributors found nothing new in the literature of almost seven of the last years in physical medicine, therapeutic exercise, occupational therapy, rehabilitation nursing, braces, crutches, wheelchairs and paraplegia.

As an introduction, the book continues to mention more aspects of the field than any other. But the reader has a right, when consulting a textbook on rehabilitation to find under the subject of paraplegia a discussion of alternating pressure pads and more on ambulation.

Most of the book is written at the physician level, but occasionally, discussion and figures are less flattering to the reader, for example, figures 112 to 118. On the other hand, the table on muscle weakness (page 402) is a fine example of good "textbook writing."

The sale of this book will not be affected in the least by this or other reviews. The name of Howard A. Rusk is known wherever the word rehabilitation is known or will become known. He has done more to spread the word than anyone in the past or than anyone in the future is likely to do. He has devoted more than two dozen years of tireless dedication to this field. Through his efforts, there has been raised the money to build a unique rehabilitation center, a showcase, to which Dr. Rusk has brought and attracted physicains and other trainees from all over the world. These are only a few reasons why we have the right to expect not a good book but the best book associated with his name. Neither the first nor the second edition is that book.

PEDIATRIC NEUROLOGY. Edited by Thomas W. Farmer, M.D., Hoeber Medical Division, Harper & Row Publishers, New York. 1964. 690 pp., 189 illustrations, $18.50.

Reviewed by: CHARLES A. WOODS,

This book represents the efforts of thirteen authorities from the fields of pediatrics, neurology, and neurosurgery. It is the newest book on this subject and is a very valuable addition. The material is presented from a broad viewpoint and the common pediatric neurological disorders are covered in detail.

The first chapter by Dr. Philip Dodge outlines the neurological history and examination of infants and children. This makes an excellent beginning for the reader. Two chapters cover very well the subject of mental retardation. Newly described inborn errors of metabolism and chromosomal aberrations are nicely reviewed in these chapters. Much interest in these subjects recently make this very valuable reading. The remaining eleven chapters include such subjects as convulsive disorders, disturbances in water and electrolytes, infection, head trauma, tumors, and cerebrovascular disorders. The last four chapters cover disorders of the basal ganglia, cerebellum, brain stem, cranail nerves, spinal cord, peripheral nerves, and muscles.

189 illustrations are included. The tables of signs and differential diagnosis are most helpful. The style and print make for a very readable text.

The book is a valuable addition to this field and is recommended to any physician concerned with the neurological problems in childhood.

Set The Example — Use Seat Belts!

BOOKS RECEIVED

Books received for review are acknowledged in this department and such acknowledgement must be regarded as a sufficient return for the courtesy of the sender. Selection will be made for review in the interests of our readers and as space permits.

Genetics and Man. By C. D. Darlington, The MacMillan Company, New York, 382 pp., Illustrated. $7.50.

Cardiovascular Surgery 1964. Council on Cardiovascular Surgery, American Heart Association Scientific Sessions. American Heart Association Monograph Number Eleven. Edited by F. A. Simeone, M.D., 200 pp. $3.00.

A Synopsis Of Contemporary Psychiatry. 3rd Edition by George A. Ulett, M.D. and D. Wells Goodrich, M.D., The C. V. Mosby Company, St. Louis, Missouri, 1965, 299 pp. $6.75.

Pulmonary Physiology In Clinical Practice. By William R. Pace, Jr., M.D., Seattle, Washington. F. A. Davis Company, Philadelphia, Pa., 1965. 143 pp., Illustrated. $2.95.

Comparative Biochemistry Of Arginine And Derivatives. Ciba Foundation Study Group No. 19. Edited by G. E. W. Wolstenholme, and Margaret P. Cameron. Little, Brown & Co., 1965. 103 pp., $2.95.

Cardiomyopathies. Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme, and Maeve O'Connor. Little, Brown and Co., Boston, 1964. 428 pp. with 136 illustrations. $12.50.

A National Program To Conquer Heart Disease, Cancer And Stroke. Report of the Subcommittee on Heart Disease. Volume II. Superintendent of Documents, U.S. Government Printing Office, Washington, D. C., 644 pp. $3.00.

Surgery of the Biliary Passages and the Pancreas. By Walter Hess. Translated from the German by Heinrich Lamm. D. Van Nostrand Company, Inc., New Jersey, 1965, 638 pp., Illustrated. $25.00.

Tracy's The Doctor As a Witness. By William J. Curran, LL.M., S.M. Hyg. Second Edition, W. B. Saunders Co., Philadelphia, 1965, 196 pp. $5.75.

Rheumatic Fever. Diagnosis, Management and Prevention. By Milton Markowitz, A.B., M.D., and Ann Gayler Kuttner, B.S., Ph.D., M.D. With a special chapter on Community Health Services by Leon Gordis, A.B., M.D. Volume II in the series Major Problems in Clinical Pediatrics, Alexander J. Schaffer, Consulting Editor. W. B. Saunders Co., Philadelphia, 1965. 242 pp., Illustrated. $7.50.

American Medical Association, Food And Drug Administration, And Pharmaceutical Manufacturers Association

The U. S. medical profession, the pharmaceutical industry and the Food and Drug Administration (FDA), are cooperating to establish a major addition to existing adverse drug reaction reporting programs.

A Registry of Tissue Reactions to Drugs will be established within the Armed Forces Institute of Pathology (AFIP) in Washington. Joint sponsors are the American Medical Association, FDA and the Pharmaceutical Manufacturers Association. The AFIP has the world's largest repository of pathological material for research and education.

"This unique cooperative effort for the benefit of the American public is the first between major drug manufacturing, drug prescribing and drug regulating bodies," said a joint statement issued by Dr. Jean Weston, director of the AMA's Department of Drugs; Dr. Joseph Sadusk, FDA medical director, and Dr. Austin Smith, President of the Pharmaceutical Manufacturers Association.

The purpose of the Registry will be to obtain autopsy or biopsy tissue specimens from suspected adverse drug reaction cases. The material will be thoroughly studied by all methods available to a full-time pathologist, including consultation with other authorities in pathology and toxicology. Results of the studies will be reported to local pathologists who furnished the study material, and monthly summary reports will be made to each of the three sponsoring organizations. The pathological material will remain on file at the Registry for future reference and study.

The tissue registry will augment the existing drug reaction reporting programs maintained by the AMA and FDA. The FDA at present receives reports of suspected adverse drug reactions from about 500 cooperating federal and military hospitals, and from 110 civilian hospitals under contract. The AMA receives such reports from physicians in private practice, a number of hospitals not reporting to FDA, and other sources.

Information is exchanged by the FDA and AMA, catalogued by data-processing techniques, and filed by data-processing machines. The data are then available for use in: identifying drugs possibly associated with adverse reactions; assisting physicians to diagnose possible adverse drug reactions; and, scientific investigations.

Establishment of a tissue registry was originally proposed by the Drug Research Board of the National Academy of Sciences-National Research Council. Twenty-eight such Registries already exist as joint activities of the Armed Forces Institute of Pathology and sponsoring professional societies. Collectively, the registries are known as the American Registry of Pathology.

The parent Armed Forces Institute of Pathology is more than 100 years old. It was established as the Army Medical Museum on May 21, 1862, when Union Army Surgeon General William A. Hammond authorized medical officers to collect and forward to Washington all pathological specimens "as may prove of interest in the study of military medicine and surgery." The Museum was renamed the Army Institute of Pathology in 1946, and became the Armed Forces Institute of Pathology in 1949.

The AFIP serves as a central laboratory of pathology for the Department of Defense and has become a center of research, teaching and consultation not only for the military but for civilian groups. AFIP offices and laboratories are in an eight-story building at Walter Reed Army Medical Center.

The first civilian group to deposit pathological material with the government laboratory (then the Army Medical Museum) was the American Dental Association, in 1895. In 1921 the Academy of Ophthalmology and Otolaryngology furnished pathologic material.

More civilian groups made similar arrangements with the Museum in the 1920s. In 1930 all were collected as the American Registry of Pathology, under the auspices of the National Academy of Sciences-National Research Council and additional Registries have been added almost yearly. Each of the 28 individual Registries is sponsored by a national medical, dental or veterinary organization, through a Registrar Pathologist who specializes in a single field of pathology.

The cost of the tissue registry is to be borne equally by each of the three sponsors, In its first full calendar years of operation, which will be 1966, the cost of operation and administration is expected to be about $100,000. The fund will be administered by the Universities Associated for Research and Education in Pathology, Inc.

The Dangers Of Diving

The dark, silent world beneath the water's surface is a dangerous place, and only the well-prepared diver should venture there.

Two articles in the current Journal of the American Medical Association illustrate the dangers of diving and describe some methods of accident treatment.

There have been 21 "scuba-diving" deaths in Michigan since 1959, report Myron K. Denney, M.D., of the Department of Surgery of Wayne State University College of Medicine, and Raymond C. Read, M.D., of the Department of Surgery, Detroit Receiving Hospital, Detroit, Mich. (Scuba stands for self-contained underwater breathing apparatus.)

Fifteen of these victims were inexperienced divers, some of whom were diving for the first time. Eighteen of the deaths were in water 25 feet deep or less.

There are five general types of underwater accidents associated with gas or pressure phenomena, reports John B. Weeth, M.D., of the Division of Research, Alton Ochsner Medical Foundation and the Department of Medicine, Ochsner Clinic, New Orleans, La.

These are (1) suction and blast injuries, (2) gas-expansion injuries, (3) decompression sickness, (4) gas-poisoning residuals, and (5) emotional reactions (panic, etc.).

Drowning is still the major cause of deaths from underwater accidents, Dr. Weeth said. In 9 of 15 reported deaths in Massachusetts, the victim perished on the surface after the face mask either had filled with water or was lost. In a survey of 24 deaths in Florida, physicians reported that 14 could have been prevented by safety lines and proper use.

"These are sad reminders that the diver's life depends on knowledge and training and that the physician's treatment for underwater accidents is to a great extent preventive," Dr. Weeth said.

He recommended that those responsible for underwater swimmers acquire a copy of the U.S. Navy Diving Manual, which gives complete diving information and tablets of underwater pressure. The manual is available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402, at $3.25.

Dr. Weeth described the five types of underwater injuries associated with gas and pressure:

Suction and blast injuries—Underwater suction injury is called "squeeze," and results from inequality of pressure. We all experience a mild type of squeeze on our eardrums when riding in an elevator if we have a momentary failure to equalize middle-ear pressure. Pressure changes in water are much greater. If a diver descends too deeply, fluid and blood may be squeezed from his lungs if his surface lung volume is compressed too greatly. A serious type of squeeze may occur when a diver's surface air hose blows loose or air pressure fails suddenly. If the face mask's nonreturn valve is not working properly, the mask will instanly be converted into a giant suction cup and pull the face of the diver into it. Serious internal injuries can result from the blast effect.

Gas-expansion injuries — Air embolism, which is usually fatal ,is most likely to occur when the victim surfaces rapidly and does not vent the expanding air from his lungs properly. As the trapped air expands, it enters the arterial circulation through the pulmonary veins and fatal doses of air go throughout the body. Air in the lungs at a depth of 33 feet wil double in volume at the surface.

Decompression sickness—Also known as caisson disease, is a more accurate term than "the bends." Decompression sickness occurs when the diver stays deep enough and long enough to force nitrogen from the air into solution in his blood and body tissues. If he surfaces too rapidly, the nitrogen precipitates in the tissues and vascular bed as nitrogen bubbles. The diver should come up slowly enough to allow the nitrogen to be breathed off. The exact method of bubble formation is not known, but carbon dioxide, muscular tension, and work are considered important precipitating factors.

"The best treatment for bubble formation is prevention," Dr. Weeth said.

When prevention has failed and bubbles occur, the patient must be taken to the nearest recompression chamber and treated according to the Navy treatment tables.

Gas-poisoning residuals—The effect of pressure increases the toxicity and noxiousness of certain gases. Nitrogen narcosis or "rapture of the deep" begins to be noticeable at 150 feet and may have a serious intoxicating effect. Oxygen toxicity is dangerous because a "grand mal" seizure may result without warning. Oxygen-rich mixtures or pure oxygen should be used for underwater swimming. A swimmer breathing pure oxygen at a depth of 30 feet for 15 minutes runs an ever-increasing risk of a grand mal seizure with each second.

Reactions not due to gas and pressure changes—Pain in the chest and joints, numbness, and other symptoms of decompression sickness may be simulated by emotional or organic medical problems.

In their report on Michigan scuba-diving accidents, Drs. Denney and Read said: "Prevention is the most logical approach to decreasing scuba-diving mortality. Physical examination with special reference to the cardiorespiratory system is a prerequisite.

"Water safety rules must be strictly obeyed. In addition, before ever donning scuba, prospective divers should be thoroughly familiar with the physiological effects of diving, especially as regards exhalation of expanding gases during ascent."

Dangers Of Hypnosis

Hypnosis is a valid tool of medicine and psychiatry, but there are dangers in its misuse, said a report in the current Journal of the American Medical Association.

There are dangers, not only to the patient, but to the physician, to medicine as a scientific discipline, and to hypnotism itself, the report said.

The report is by Louis J. West, M.D., of the Department of Psychiatry, Neurology, and Behavioral Sciences, University of Oklahoma School of Medicine, and Gordon H. Deckert, M.D., of the Oklahoma City Veterans Administration Hospital.

They called for more research on hypnosis, more education concerning it, and greater clarification of standards for its use.

The hypnotic trance itself is a virtually benign or harmless condition, the report said. But dangers to the patient seem to come from his response to suggestion and his reaction to a situation as it appears to him.

"One college girl developed a severe anxiety hysteria when an amateur hypnotist at a party ordered her to cut off her hair with an imaginary scissors," the report said.

Hypnosis, used carelessly, may bring on a psychiatric illness, it may make existing mental conditions worse, or it may revive symptoms of an illness that was improving, the report said.

Drs. West and Deckert cautioned that the dangers of hypnotism have at times been exaggerated, "nevertheless, they do exist, and can be reviewed with profit."

Another danger to the patient is that hypnosis may mask symptoms so that he appears to be healthy. He may even feel and act well, but such "mashing" may delay much-needed medical oı psychiatric treatment.

A patient may become dependent upon the hypnotist. There are indications that sexual seductions may have been aided by hypnotic suggestion.

"However, one of us once used hypnosis to reinforce the wavering virtue of a war-bride (whose husband was overseas), much to the anger and frustration of her nearly successful seducer," the report said.

Criminal activity may be induced by hypnosis, the report said, although experiments have given conflicting evidence.

"Because of his ability to induce hypnosis and thereby influence others, the operator (hypnotist) may become convinced that he is somehow superior to other people or that he enjoys powers beyond the scope of ordinary men. . . . The process of such corruption may turn a well-meaning hypnotist, devoted to his work, into a grandiose professional cripple," said the report .

Those who use hypnosis as part of a program of professional treatment may rely on it too heavily, the report said. They risk becoming narrow specialists rather than broadly skilled physicians and psychiatrists.

"Even today, those who are identified with use of hypnosis in medicine are viewed askance by many. Non-hypnotically oriented physicians are among the severest critics," the report said.

The report suggested several ways of eliminating or clarifying the dangers of hypnosis. These include research to define more clearly the instances when hypnosis should be used, inclusion of hypnosis in undergraduate and graduate training for psychiatry, stricter legal curtailment of hypnosis used for entertainment or by amateurs, quacks, or lay healers, and avoidance of over-commitment to hypnotism as a technique in psychotherapy.

Poison Control Centers

A newly revised directory of the 545 poison control centers now operating in the United States and possessions was issued recently by the Public Health Service's Division of Accident Prevention, U. S. Department of Health, Education and Welfare. The revised directory, Public Health Service Publication No. 1278, replaces the directory published in August, 1962.

The new "Directory of Poison Control Centers," compiled from information furnished to the National Clearinghouse for Poison Control Centers by State health departments, lists the address, telephone number and directing personnel of poison control centers functioning in 469 cities in 48 States, and in the Canal Zone, District of Columbia, Guam, Puerto Rico and the Virgin Islands.

The centers listed in the directory function independently within State poison control programs. They are supported with information and technical data services by the National Clearinghouse for Poison Control Centers, operated by the Poison Control Branch of the Division of Accident Prevention.

The new directory includes centers which provide round-the-clock information services for the medical profession concerning the prevention and treatment of accidents involving ingestion of poisonous and potentially poisonous substances. It is available for 20 cents from the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402.

New AMA Occupational Health Guide For Physicians Published

A new guide, "Personal Protective Equipment for Employees in Industry" has been published in the April issue of the AMA *Archives of Environmental Health,* according to Henry F. Howe, M.D., director of the American Medical Association's Department of Occupational Health.

Produced and approved by the AMA Council on Occupational Health, this guide covers an area not heretofore covered from the viewpoint, and for the use of, the medical profession.

Dr. Howe explained that this guide is intended primarily for those physicians who serve industry part-time or on-call, and to whom industrial employees come for preplacement, periodic examinations, diagnosis or treatment. Its purpose is to acquaint the physician with the need, selection, and use of clothing and devices to protect workers from hazards which may result in occupational illness or injury.

"Full-time physicians in industry presumably are well acquainted with the matters discussed, but even they may find in this guide an effective review of the subject," Dr. Howe said.

Through study of the material presented in the guide, reference sources, and checklist, the physician should be able to develop an understanding of the capacities and limitations of protective equipment for a specific hazard, as well as the need of training in its use, care and maintenance.

Individual copies of the guide may be obtained without charge from the AMA Department of Occupational Health, 535 North Dearborn Street, Chicago, Illinois 60610.

COMMUNITY HEALTH WEEK SCHEDULED NOVEMBER 7-13

The third annual nationwide observance of Community Health Week will be November 7-13, 1965, F. J. L. Blasingame, M.D., executive vice president of the American Medical Association, has announced.

"Teaming up for Better Health" will be the theme. State and local medical societies will join with allied health groups in developing public programs emphasizing local medical progress, available health facilities and services, and the individual and cooperative roles played by members of the community health team, Dr. Blasingame said.

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An Effective Measles Vaccine For Infants

Infants can be effectively vaccinated against measles as early as three to six months of age, says a study published in the current Journal of the American Medical Association.

Such a vaccination, done with "killed virus" vaccine, increases somewhat an infant's resistance to measles and begins vaccine protection three to six months earlier than customary.

The protection, however, is only partial. More complete immunization usually can be given later by vaccination with live-virus type vaccine at age nine months to one year.

The report was prepared by Samuel Karelitz, M.D., Priya Kanchanavatee, M.D., Mitsuko Arai, M.D., and Hedda Acs, M.D., all of Long Island Jewish Hospital, New Hyde Park, N.Y., and Ann Schluenderberg, ScD., of the Department of Epidemiology and Public Health, Yale University School of Medicine, New Haven, Conn.

They found that of 165 infants studied, those given the early, killed-virus vaccinations showed significantly higher resistance to measles and had fewer unfavorable reactions to the later measles vaccination than did a control group of infants. The reactions include rash and fever, common among infants given live-virus measles vaccination without earlier vaccinations.

A newborn child is usually protected against measles for the first months following birth by antibodies transferred from his mother's body during gestation. These protective antibodies gradually disappear.

Measles then became a "relatively frequent and severe disease in the second half-year (of life), when it accounts for considerable morbidity (disease) and mortality in many countries," the report said.

The early vaccinations thus are to give protection in the three to six-month period between the decline of newborn resistance to measles and vaccination for more lasting protection, beginning at age nine months to one year.

Longer-term vaccination with attenuated (partly killed) live-virus vaccine cannot be given earlier in an infant's life because the live virus probably would be neutralized by the infant's maternal antibodies, which are then still at work.

Live-virus vaccine, when effective, offers immunity for an indefinite period, which presumably may be lifelong in some persons.

The investigators administered the killed-virus vaccine at the same time customary diphtheria, pertussis and tetanus (DPT) injections were given. No combination DPT-measles vaccine is yet available. Infants were given one to three injections, depending upon age; younger infants got more vaccinations.

Whether the early measles vaccination comes into common use may depend upon cost and convenience of the vaccine, as related to the short-term risk of measles infection. Wide usage may depend upon development of an easily administered combination DPT-measles vaccine, and its cost.

At issue is temporary measles protection over a relatively short (three to six months) period of the infant's life, during which he continues to have some "passive resistance" to measles, acquired at birth.

An effective immunization program against measles, the report said, can include early vaccination at age three to six months with killed-virus vaccine, followed at age nine months to one year with live-virus vaccine. Such a program reduces the severity of unfavorable reactions to the live-virus vaccine.

From The AMA News . . .

"Physicians all take pride in being members of a learned, respcted profession, but too few of them give sufficient thought to the common duties imposed on them by this membership.

"At the core of this responsibility as a member of the profession is the role of a stewardship of a body of knowledge essential to the public welfare. This responsibility involves three major areas of concern:

> "Physicians must keep the knowledge alive by transmitting it to the generations of physicians who will follow them.
>
> "Physicians must strive to advance the body of knowledge.
>
> "Physicians must use all available knowledge in a way which will best benefit the health of the people.

"These are the three responsibilities — teaching, research, and patient care. By the nature of his own interest, ability, and opportunity, each physician directs his daily activities more toward one of these duties more than to the others."

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Connecticut Medicine

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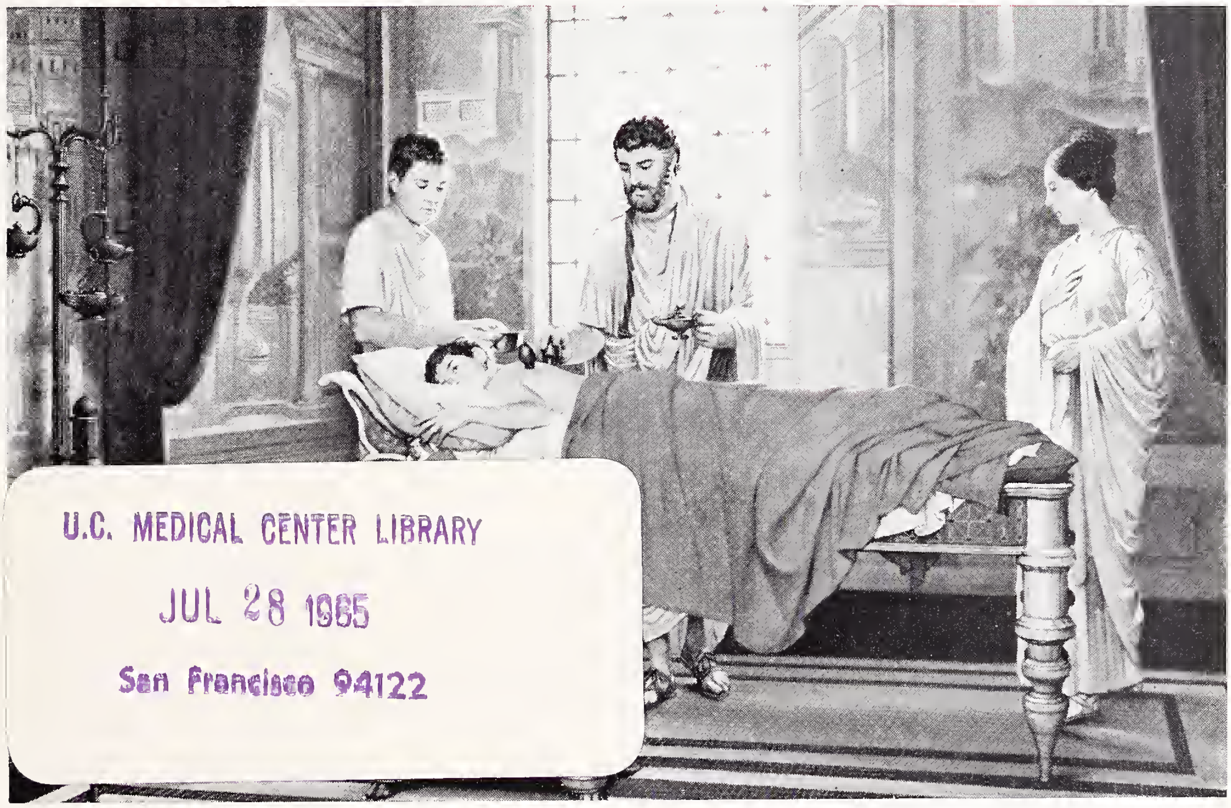

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GALEN: INFLUENCE FOR 45 GENERATIONS (see page 479)

AMYTAL TAKES THE EDGE OFF DAYTIME ANXIETY AND TENSION

Amytal is a moderately long-acting barbiturate that takes the edge off daytime anxiety and tension without significant change in mood and attitude. Since Amytal is metabolized in the liver within twenty-eight hours, overlapping of effect is minimized, and renal damage does not constitute an absolute contraindication to the drug.

Side-Effects: Idiosyncrasy or allergic reactions to the barbiturates may occur.

Precautions and Contraindications: Amytal should be used with caution in patients with decreased liver function, since a prolongation of effect may occur. Administration in the presence of uncontrolled pain may produce excitement. Warning—May be habit-forming.

Dosage: Doses should be individualized for each patient. The usual adult sedative dosage ranges from 30 mg. (1/2 grain) to 50 mg. (3/4 grain) two or three times daily.

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis 6, Indiana.

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Connecticut Medicine

editorials

Claude Bernard And Cardiac Catheterization

The widespread use of intravascular catheterization in modern medicine has aroused interest in the origins of this technique, and two recent communications show that the first cardiac catheterization was carried out by Claude Bernard in the laboratory of his teacher, Magendie. The experimental animal was the horse. Siegel[1] discusses the background of the experiments, while Geddes, Hoff, and McCrady[2] describe a number of classical studies in cardiovascular physiology utilizing the horse as an experimental animal, and their own repitition of these using modern instrumentation.

The sources of animal heat were the subject of considerable speculation in the early nineteenth century.[3] Magnus concluded that the higher carbon dioxide content of venous blood signified that the bulk of physiological oxidation took place in the peripheral tissues. Lavoisier felt that the blood in the pulmonary capillaries was the major site of biological combustion. Bichat's concept of tissues and Schleiden's and Schwann's of cells as the seats of metabolic activity were not as yet widely accepted.

Claude Bernard reasoned that if Lavoisier's concept were correct, then the blood in the left ventricle would of necessity be warmer than that in the right. In order to test this hypothesis he first introduced rigid thermometers into the chambers of the heart through the carotid artery and jugular vein. The horse was used as an experimental animal because Magendie, then president of the Health Commission for Horses of the War Department, had a number of these animals at his disposal who were suffering from glanders and were destined for slaughter. These early experiments indicated that Lavoisier's doctrine was incorrect, since the temperatures found were higher in the right than in the left ventricle. In later experiments, Bernard used thermocouples encased in flexible rubber sounds similar to urological catheters, and these instruments were introduced into the heart chambers via the jugular vein and carotid artery. A number of simultaneous measurements were carried out, and all confirmed the higher temperature of the blood in the right ventricle. These studies were carried out in the 1840's, about ten years before the first use of the intravascular catheter for hemodynamic measurements by Chauveau and Marey, who are generally credited with the first use of the method.

Bernard found it difficult to accept his data as proof of the Aristotelean concept of the function of the lungs as cooling the blood. In further experiments it was demonstrated that the venous blood of an extermity was cooler than the arterial at rest, but warmer during activity. By catheterizing the inferior vena cava above and below the entrance of the renal veins, he showed that the kidneys produce heat. Blood in the hepatic veins was found to be warmer than that in the portal vein. He concluded that there is no single site of body heat production, but that all active parts of the organism

THE COVER

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GALEN was a pillar of medicine; the last important pillar in the millennium of Greek domination of the medical world. Physician to emperors as well as commoners in the Roman empire, Galen (130-200 A.D.) traveled extensively, lectured widely, wrote prolifically. The great Greek was a shrewd observer who gained much experience through experimentation. Cupping was among the forms of treatment which he advocated. Pharmacy as well as medicine benefited from his formulas, called "galenicals;" he was a leader in the health sciences of his day. Galen's teachings were accepted as dogma by Medicine for fifteen hundred years.

produce heat. By collection of blood samples through his catheters he was able to show that heat production in an organ was accompanied by a decrease in the oxygen and an increase in the carbon dioxide content of venous blood.

Geddes, Hoff, and McCrady repeated Claude Bernard's temperature measurements in the horse with modern instrumentation, and demonstrated a differential of 0.2 degrees F. in favor of the right ventricle. They also measured the horse's blood pressure by the Rev. Stephen Hales' method with a vertical tube and by pressure transducers, and obtained good correlation. Chauveau and Marey, who first studied cardiovascular dynamics by using catheters in 1856-61, measured the pressures in all chambers but the left atrium, and these experiments were repeated with modern equipment. The recordings were similar to those obtained a century ago. Chauveau and Marey demonstrated the inverse relationship between blood pressure and heart rate in the horse by compressing the aorta with the hand and arm inserted into the large intestine through the rectum. Firm compression against the spine caused a rise in peripheral resistance and therefore in blood pressure. Reflex slowing of the heart followed. Although Hoff's group was able to demonstrate this phenomenon, the magnitude of the change was much less than that obtained by the earlier experimenters. This was attributed to depression of the reflex by anesthesia.

Sir Thomas Lewis described auricular fibrillation in the horse in about 1900, and observed the fine fibrillary movements directly as well as the atrial hypertrophy in chronic cases. Hoff used the application of acetyl-beta-methyl-choline topically to the atria to induce auricular fibrillation, a method he and Nahum developed in New Haven some years ago. All attempts at defibrillation in the horses so treated were unsuccessful.

These repetitions of classical studies in the horse point up its importance as an experimental animal in the history of the development of cardiovascular physiology, and to Claude Bernard, using this animal, belongs the credit for the first use of intravascular catheterization.

H. L.

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Potassium Deficiency And Post-Operative Ileus

Abnormalities in the concentration of specific plasma electrolytes may contribute to the development of paralytic ileus in man. Changes in electrolyte metabolism may follow major operative procedures and as a result of these alterations, potassium deficits sufficient to cause serious clinical derangements may occur. Radiologists however have paid little attention to the possibility that disturbances in these plasma electrolytes may be important contributing factors to the development of postoperative distention. While potassium deficiencies associated with intestinal ileus are most commonly encountered in the postoperative period, they may also be found in a variety of disease states such as diabetic acidosis, periodic paralysis, prolonged infusion of intravenous fluids lacking potassium with administration of specific diuretics, laxatives or excessive adrenocortical steriods in abnormal gastrointestinal losses in association with prolonged vomiting and diarrhea. Attempts have also been made to implicate hypokalemia as a cause for the toxic dilatation of the large bowel associated with ulcerative colitis. More recently potassium deficiencies have been noted in association with exudative enteropathy of the intestines and in association with villous adenomas of the bowel.

Abdominal operative procedures, trauma and inflammatory fluid collections occurring in the postoperative state may also be associated with metabolic alterations. Entercolitis occurring in the postoperative period may also be a factor in the production of electrolyte depletion states. In cases of marked bowel distention following operative procedures, potassium depletion as a cause for this ileus should be kept in mind by the radiologist. The ileus resulting from potassium deficits may be an important factor in some cases of postoperative death by contributing to fluid and electrolyte depletion. The failure of the radiologist to recognize this basis for the ileus may bring an already critically ill patient to a needless operative procedure for the relief of suspected bowel obstruction. It must be stressed that potassium loss from cells is only one aspect of a generalized biochemical distortion encountered in the postoperative state.

Robert M. Lowman, M.D.

Induction Of A Lupus-Like Illness By Procainamide H Cl

Drug induced disease is now a major medical problem.[1] One such disease systemic lupus erythematosus, S.L.E., has been shown to appear follow-

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ing procainamide administration and to disappear with the discontinuance of the drug.[2,3] Seven instances of a lupus-like illness occurring during the administration of procainamide have been reported in the past 18 months and in one of these the symptoms developed after only one month of treatment. One of the four patients reported by Kaplan[4] after prolonged therapy with procainamide developed characteristic manifestations of S.L.E. such as arthralgia, muscle soreness, rash, fever, pleurisy with effusion arteritis, anemia, leukopenia, spleno megaly and a direct positive Coombs test. In another patient lupus cell preparations were negative shortly before procainamide was started and the L.E. phenomenon appeared during the course of therapy.

Hydralazine H Cl and some of the anti-convulsant medications have been most frequently cited among a long list of drugs implicated in the induction of a lupus-like state. Case reports of such a connective tissue disease following the use of procainamide have been rare until 1962, but it can now no longer be considered rare, because the recent case reports suggest that a procainamide induced autoimmune state occurs with a frequency that warrants attention.

A recent study based on retrospective evidence[5] suggests the existence of a lupus diathesis in the hydralazine syndrome. The concept presented is that overt S.L.E. is the end stage of a long standing process possibly genetically induced that may remain latent until unmasked or exacerbated by one of various agents. Is this the same basis for the induction of S.L.E. by procainamide.

On the basis of multiple hypotheses we could speculate that S.L.E. a disease of hypersensitivity could arise *de novo* as a result of drug allergy. Or it could be that the drug precipitates S.L.E. in a person who has an inherent S.L.E. diathesis. Or the occurrence of S.L.E. during drug administration may be purely coincidental. If it were purely coincidental, it should not disappear with discontinuance of the drug. In most instances the lupus-like state does disappear, though it may take a few weeks before the patient returns to normal. The hypothesis that S.L.E. arises *de novo* as a result of drug allergy still leaves open the question why some who receive procainamide do not develop such hypersensitivity. Perhaps there is a genetic defect in some patients which allows for the development of a hypersensitive state. In this respect we have an analogy in patients that develop drug induced hemolysis, because they lack an enzyme 6-phospho dehydrogenase in the red cells.

If S.L.E. develops only in patients with an S.L.E. diathesis, then perhaps other members of the immediate family might show latent evidence of the existence of such a diathesis. An increased incidence of serologic abnormalities has been reported in asymptomatic family members of patients with S.L.E.,[6] but no studies have been reported on relatives of patients with a drug induced S.L.E. syndrome. Kaplan did make anti-nuclear determinations and performed serologic tests for syphilis on six relatives of two of his four patients and found them negative. Nevertheless, three of Kaplan's patients who improved following discontinuance of the drug had a recurrance of clinical manifestations and persistence of laboratory abnormalities. These findings suggest that procainamide precipitated a self-perpetuating auto-immune process and supports the hypothesis that these patients did have a latent S.L.E. diathesis which was exposed by the administration of the drug.

It is clear that further studies are needed on patients and their relatives before and during the administration of procainamide to clarify the basic mechanism involved in the production of a lupus-like state and to settle the question of coincidence, diathesis or *de novo* appearance.

In the meanwhile the report of lupus-like disease occurring during procainamide therapy has alerted the clinicians to a potential hazard. Many drug induced diseases derive their hazard from the practice of patients taking drugs over prolonged periods without supervision by their physician. We must realize that all modern drugs though they have considerable therapeutic value, also carry an inherent hazard that must be watched for. Procainamide is a case in point. It is an excellent drug in the management of patients with certain cardiac arrhythmias, who cannot tolerate quinidine. But we must be aware that procainamide can produce a lupus-like state and be prepared to discontinue it if evidence of a lupus-like state appears. We must also appraise and reappraise its action from time to time not merely seeking evidence of arthalgia, cutaneous lesions, fever, muscle pain, but also to limit the use of the drug only in appropriate situations and only for as long as the indication for its use remains.

L.H.N.

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Myocardial Contusion

Our attention has been redirected to cardiac contusion as a result of the experience of De Muth and Zinsser[1] who report 8 patients with documented cardiac trauma encountered in a three year period in which the diagnosis was restablished by autopsy or clinical evidence. It was apparent that the great problem with myocardial contusion is the frequency with which its presence is entirely unsuspected. Part of this was due to associated severe concomitant injury which more frequently than not is associated with myocardial contusion and serves to mask the heart injury. Part is due to the low index of suspicion relating to possible occurrence of myocardial contusion. The fact appears to be that myocardial damage due to trauma is not rare and indeed it may be quite common.

It appears that the locale in which the surgeon and cardiologist practice will largely determine the frequency with which they will encounter cardiac contusion. Glendy and White[2] at the Massachusetts General Hospital found no instance of cardiac trauma among 7,600 autopsies. Reports of this kind have led to the belief that this injury is rare. De Muth and Zinsser however encountered six instances in 144 consecutive autopsies in a two year period. Since the steering wheel impact mechanism is by far the most prevalent cause of this injury, it is not surprising why high speed highway accidents should find their way to community hospitals rather than to large metropolitan hospitals from which most medical literature originates. This may account for the failure to appreciate the true incidence of this injury and the low index of suspicion of its existence among surgeons who are called to treat such injuries, especially those about the chest.

Thus it would appear that the great problem of myocardial contusion is the frequency with which its presence is entirely unsuspected. To the surgeon the aspect of greatest practical importance is that he may choose to perform an operation because of an associated injury being completely unaware that anesthesia and the stress-producing operation can be hazardous to life because of an associated myocardial injury. To be sure the emergencies such as hemorrhage, ruptured viscus and the like may require that a risk be assumed. However, if the surgeon knew of a serious myocardial injury being present, he may use alternative methods temporarily as for example in dealing with fractures of long bones in the majority of associated injuries in which life is not immediately at risk.

Clinically one can encounter tachycardia gallop rhythm and all kinds of arrhythmias even ventricular fibrillation. The great frequency of arrhythmias attests to the fact that the injured myocardium being electrically unstable may develop arrhythmias even when no gross or microscopic cardiac lesion can be demonstrated. There are also numerous instances in which early complete recovery can occur leaving the myocardium relatively free from permanent injury. This is made possible by the unique vascular channels in the myocardium which can through the arteriosinusoidal connections rapidly carry away exuded blood which in other organs could lead to hematoma formation.[3]

In more severe cases however scarring can occur after healing, traumatic pericarditis with fibrinous exudate and blood stained pericardial fluid and even cardiac tamponade can develop after contusion. Rarely aneurysm formation has also been reported as well as septal perforation and heart failure.[3]

The most constant symptom after a blow on the chest is precordial pain which may assume the character and radiation of that of coronary artery occlusion. It is however not uncommon for the pain to begin hours or days after the trauma and this introduces a difficult diagnostic problem to differentiate between cardiac contusion itself and myocardial infarction caused either by damage to a coronary vessel or coincidental development of coronary occlusion in a patient already having coronary artery disease.

This differentiation may be made by electrocardiographic studies, since RST and T changes are constant findings in injury to the pericardium and myocardium. However, there are times when it will be difficult from the electrocardiogram alone to differentiate between pericardial and myocardial trauma and myocardial infarction. Serial studies can make the differentiation easier. Where the myocardium is damaged will have some bearing upon the resulting electrocardiographic changes. Bright and Beck[4] injected blood into the septum of a dog and followed the T waves. At first there was a high take-off and deep negative T. After 32 days the record became normal. This confirms what has been said above about the remarkable capacity of the myocardium to drain away accumulated blood without sustaining serious permanent injury from myocardial hemorrhage.

From the medico-legal standpoint, the real difficulty is how to determine whether contusion aggravated a pre-existing lesion to contribute to disability or death. If there is an acute myocardial lesion it must be differentiated from myocardial ischemia, acute myocardial infarction or from contusion superimposed upon an old myocardial infarction. Obviously here history assumes great importance, for if the patient in the past could perform his normal work and becomes incapacitated

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with cardiac insufficiency following cardiac trauma, then a relationship between the injury and the disabled heart is established.[3, 5]

Turning to prognosis we find that most authorities have stated that a large majority of the patients recover uneventfully. Nevertheless the literature itself is weighted heavily with fatal cases as De Muth and Zinsser's report emphasizes. The possibilities of course after contusion are complete recovery, which seems to be the rule, reduced cardiac capacity pain on effort, congestive heart failure, myocardial rupture, tamponade which can occur during the second week. Nahum[3] reported the development of a ventricular aneurysm months after a cardiac contusion in a young athlete and De Muth reported a young patient somewhat incapacitated 13 years after a cardiac injury. Akenside[6] in 1764 reported the case of a 14 year old boy who died six months after a contusion of the heart. There was present residual necrosis extending almost completely through the myocardium. Such cases point up the importance of cardiac symptoms months or years after a myocardial contusion.

Aside from having a high index of suspicion of cardiac trauma in patients who have sustained chest injuries, the treatment of the patient with cardiac contusion is to avoid anticoagulants because of the danger of hemorrhage. The patient must then be relieved of pain, dyspnoea, orthopnoea and arrhythmia as we would do for any other patient suffering from these developments from whatever cause. Above all, such patients must be given sufficient bed rest until the heart has healed which usually takes 2-4 weeks. The alert physician will not be satisfied with a negative initial electrocardiogram in such patients since many electrocardiograms become positive 2 days later. He will also be alert to dangers of ventricular fibrillation which can occur with minimal damage and to development of cardiac tamponade which when treated adequately may be life saving. The report of De Muth and Zinsser has served to alert the profession to a frequently overlooked complication in patients with trauma to the chest, namely myocardial contusion.

L.H.N.

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Second Thoughts On The Therapy Of Hypertension

There can be no question that every patient with hypertension must be viewed as a puzzle which requires an explanation. There are some removable causes such as renal artery stenosis, pheochromocytoma, pathology in the urinary tract which must be searched for and when present eliminated. If no known cause is found the puzzle deepens and we must always bear in mind that until the cause is discovered, treatment at best will be less than perfect.

This is perhaps the reason why some investigators approach the use of blood pressure lowering drugs with scepticism and restraint[1] in the management of hypertensive disease. They prefer to concentrate on the search for the cause of the disease and fear that complacency and acceptance of present day drug therapy might lead to the stifling of urgently needed basic approaches to the problem of hypertensive disease. They point to the many proposed therapies for hypertension in the past 50 years that eventually ended in oblivion. They question the uncertain estimates of morbidity and mortality in the natural history of a disease of highly unpredictable cause. They doubt that arteriolar or arterial disease is in fact a consequence of simple elevation of arterial pressure. They demand more convincing proof of the clinical usefulness of anti-hypertensive drugs. They suggest an atmosphere of less enthusiasm and more caution in interpreting the results and implications of drug therapy in hypertension. This attitude is very well in the abstract, but is not too helpful when we are faced with a patient who has hypertension. For here we must treat the patient, not merely his disease.

Any treatment should have as its aim to improve a patient's well-being or expectation of well-being. In the case of hypertension, the first question we must ask ourselves is whether anti-hypertensive therapy works. In all probability the answer is yes, at least in the malignant phase of hypertension which if adequately treated has an improved life expectancy of 6-8 times[2] greater than without treatment, especially if renal damage is not severe. In this case the outlook for this uniformly fatal disease may be transformed.

The benign phase is much more variable than the malignant phase and admittedly it is more difficult to assess the effects of therapy and comparison of the results retrospectively is difficult. But most of the comparisons do show an improved expectation of life and diminished frequency of complications in the adequately treated as compared with the untreated groups. Hamilton[3] selected patients under age 60 with average diastolic pressure over 100 that he treated for six years. Excluded from the study were patients with secondary hypertension and patients with complications including known cardiac, cerebrovascular, retinal or renal involvement. He found that untreated males fare worse than females who are less likely to develop a complication in the succeeding six years.

What then should the physician do as between these two opposing views on using drugs in hypertension. Of course he needs to be interested in the well-being of his patients. The probability of increasing the expectation of life of patients in the malignant phase by 6-8 times is not to be taken lightly. Neither is the probability of diminishing the frequency of complications in his patients with benign hypertensions 39 out of 40 times to be taken lightly or disregarded.[2] But he also needs to remember the nature and actions of the drugs being used. He needs to be alert to whatever added risk there is from the special complications that at times occur from the drugs themselves. The drugs used are usually reserpine, alphamethyl-dopa, guanethidine, rarely hydralazine, and almost always the thiazide diuretics.

Reserpine may cause mental depression, deplete the heart and peripheral vascular system of its norepinephrine increase gastric secretion of hydrochloric acid, and promote hypermotility. Thus it acts on several systems and the alert physician will be careful in its use. On the central nervous system it occasionally produces profound depression and in some cases has even led to suicide.[4] The depression may appear early in therapy or develop insidiously after many months of apparently uneventful treatment. Depression is much more common in patients previously depressed though it is not limited to them. Thus all patients on reserpine should be specifically questioned at each visit regarding this symptom and the drug must be stopped at once and the patient observed until the symptoms subside.

Obviously every patient being treated with reserpine must also be free of peptic ulcer since the hypersecretion of hydrochloric acid can reactivate a latent ulcer or aggravate an open one.[5] Furthermore, reserpine should not be used when heart failure is present, since the cardiotonic effect which comes from nor-epinephrine is abolished, and the patient may develop edema from loss of one of the factors promoting cardiac contractility. Finally by depleting cardiac and peripheral catechol-amines, it interferes with the body's defenses against hypotension. These defenses are especially necessary under the stress of anesthesia and surgical intevention and it is for this reason reserpine needs to be stopped and operation deferred for 1-2 weeks to allow the heart and peripheral vessels to regain their nor-epinephrine source.[6]

Guanethidine also is a sympatholytic agent and when the patient stands up he may develop an orthostatic fall in blood pressure,[7] the blood tends to pool in the lower parts of the body, there is a reduced venous return and cardiac output and a reduced coronary blood flow. It may therefore increase coronary insufficiency and produce symptoms of angina pectoris. It also can produce hypermotility of the gastro-intestinal tract, increased quantity of gastric juice and require atropine like drugs. These same findings may follow the use of alphamethyldopa though to a lesser extent.[8] But this drug also depletes the heart of nor-epinephrine and like reserpine removes an important cardiotonic element that is needed to combat heart failure.

Thiazide drugs of course are helpful in heart failure, but they do not remove the basic fault that follows reserpine and sympatholytic drugs that is loss of nor-epinephrine an important cardiotonic substance in the normal scheme of cardiac reserve. Thiazide however may cause potassium wasting which is especially undesirable when digitalis is being used.[9] Besides potassium wasting thiazide drugs also deplete sodium, depress glomerular filtration, and elevate the BUN in hypertensive patients.[10] It is still not clear whether the renal changes are caused entirely by sodium depletion or in part also by hypovolemia. At any event when the renal function is borderline or impaired the added insult of thiazide administration will often increase or produce azotemia and necessitate withdrawal or reduction of the offending agent. Since renal insufficiency often accompanies the more severe hypertensive states, it clearly presents a troublesome problem in the management of hypertensive states.

We must also be alert to the metabolic effects of the thiazide drugs. Laragh has pointed out that the thiazide type drugs produce hyperuricemia probably by reabsorption of uric acid and may precipitate gouty episodes. This might be overcome by allopurinol.[11] Ferguson[12] has shown that occasionally diabetes may be precipitated in potential diabetes. Therefore patients with positive family history of diabetes, those with high fasting blood sugars and with actual diabetes need to be watched especially carefully by frequent urine checks for glucose, weight loss, and polyuria if they are on thiazide drugs, since the diabetic effect is reversible.[13]

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If the alert physician decides to treat his hypertensive patient he need not retreat into therapeutic nihilism for fear of iatrogenic difficulties. Most of the difficulties can be avoided by changing drugs or dosages. But the physician needs to remember the pharmacology of the drugs he uses and also that the nature of the disease he treats is far from understood.

L.H.N.

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Acceleration Of Wound Healing

The idea that under certain conditions tissues liberate growth promoting substances is not new. It has been known for a long time that if a substantial part of the liver is removed, the remainder immediately begins proliferation until the whole liver is restored. In skin and subcutaneous wounds a similar process begins and continues until healing has been restored. In ontogenesis growth factors are liberated which seem to cause development of organs and tissues, the most recent one being the nerve growth factor (N.G.F.) which causes proliferation of the sympathetic nervous system.[1]

It is therefore not surprising that one should search for and find a substance to promote healing of wounds. Lattes, et al.[2] was interested in searching for a substance that would overcome the inhibition of wound healing that results from cortisone administration. He reasoned that reparative processes may result from the local elaboration or activation of some chemical substance which is present in tissues that are undergoing healing and with the cortisone treated animal he had an excellent model system for studying the action of various tissue substances upon wound healing. He soon found that the cartilage locally applied would overcome the inhibition of wound healing effected by cortison. If cartilage could do this under inhibitory states why would it not do it even better in a normal post-operative metabolic and endocrine environment?

Prudden and his co-workers[3,4,5] then undertook an extensive series of investigations to test various cartilage preparations upon the reparative processes in wounds. They studied histological changes and tensile strength in wounds of both animals and man. The most active preparation is acid-pepsin digested cartilage properly milled. The powder has been prepared from bovine adult and calf tracheal cartilage, shark skeleton, from crocodiles, teju lizards and human knee. All these sources have proved to be active when properly prepared. But the most active has a particle size of 20u prepared from calf trachea. With this material one achieves the maximum increase in wound tensile strength of 52 per cent. Histologically the wounds show earlier reticulum, collagen and fibroblast proliferation evident by the third day and continuing through the normal period of clinical concern for the structural integrity of the wound.

In Prudden's recent experiments on fifteen human volunteers, there were three failures but like all good investigators he learned from the failures as well as the successes. The failures turned out to be due to an inactive preparation which also failed in producing accelerated healing in the rat and thus demonstrated the similarity between the rat and man as test animal in the study of wound healing.

As the cartilage treated wound ages, it does not become a mass of essentially acellular collagen as does the cicatrix of the untreated wound, but instead active proliferation continues up to 40 days after wounding. The scar does not become hypertrophic or keloidal, but approximates the normal tissue before the wound occurred. Thus it would seem that once the wound healed the substance either ceases to act or that the cartilage also contains an inhibitory agent preventing cicatrization or overgrowth.

A considerable clinical evaluation of the material has already been done. The material was found not to be toxic when applied to 100 primary closures of surgical incisions at a density of 2-4 mg/square cm of wound surface. No aberrant blood counts, liver chemistry or renal chemistry were encountered and all wounds healed without event. The material has been applied to the surface of more than 60 chronically non-healing wounds with successful indication of granulation in all but one instance. These chronic wounds were from 2 months to 7 years in duration that did not heal regardless of all methods employed until cartilage powder was applied.

The question of course still unanswered is what the physical characteristics of the wound will be over long periods of time especially in patients who otherwise would develop hyperplastic wounds and keloids.

It is clear, however, that the effectiveness of milled cartilage in the acceleration of wound healing is established. Since most of the morbidity and mortality of surgery is due to failure of wound healing, we are now in possession of a substance that will make this deficiency correctable.

L.H.N.

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The Computer In Electrocardiography

It would seem as if the era of automated data collection in electrocardiography has arrived but there are still many undecided details of application and at present the cost of equipment prohibits the general use of the computer on a large scale. One thing has become clear at least for the present that the recording of electrocardiogram and its final interpretation in terms of the total clinical picture presented by the patient is not likely to be taken over by a machine. However, in the areas of statistical analysis, codification, quantitative differential diagnosis and speedy retrieval of information, the computer will and can contribute in a profound degree to electrocardiography.

In the first place a computer cannot recognize distortions that are caused by slow deflection times, discrepancies in electrode resistance, and misplacement of lead wires. At present a skilled electrocardiographer makes allowances for these artefacts intuitively in his interpretation. The skilled electrocardiographer also recognizes when the instrument has relatively high or low frequency characteristics. The use of the computer therefore is bound to force more rigorous attention to well-known principles of recording than were followed heretofore and more attention to the high fidelity characteristics of the instrument in use. In short for the computer we will need records without instrumental distortion.

An analogue computer will probably not turn out to be a useful one because of certain technical hazards. The data is most often put on frequency modulated magnetic tape. Unfortunately, the magnetic tape varies considerably in quality and reliability of reproduction of electrical signals. Therefore, the computers and programs will vary in the precision with which the deflections and intervals will be recognized. These potential shortcomings of instrumentation and programming can become serious but unrecognized realities in the computer era. The digital computer overcomes these difficulties.

Once instrumental distortion is eliminated, the next step is interpretation. Here a difficulty at once presents itself. The electrocardiogram is an electrophysiologic record of cardiac activity. Only inferentially does the electrocardiographic interpretation apply to the anatomic alterations that may be responsible. Furthermore, extrapolating to anatomy is a matter of probability not certainty. Thus such terms as electrocardiogram of antero-septal infarction, left ventricular hypertrophy and pericarditis are of the order of more or less probability. If a computer program is designed to yield in the final print-out the diagnosis in terms of anatomic change, the physician will have to be alert to the fact that the correlation between the electrophysiologic data and the anatomic alterations in the myocardium is far from perfect. Otherwise the computer could give the doctor misleading information and affect the therapeutic management adversely.

If the computers are programmed to represent anatomic disease because of using preselected cases of these types, then the machine will make exact diagnoses in cases known to have a specific anatomic alteration. But what about the large numbers of similar electrocardiograms that are not known to be due to an anatomic alteration. In such cases the computer will not reveal but indeed obscure the considerable limitations of the electrocardiogram in making such a diagnosis.

One thing that the computer is doing to electrocardiography is making us search for leads, preferably fewer than the twelve conventional ones, that will eliminate the redundant and reduplicated information found in twelve leads. Some believe that three leads with a maximum of four electrode placements should provide all the information that is necessary to diagnosis, and Kossman[1] is investigating three orthoganalized leads for input into the computer. There is still no agreement among computer cardiographers as to which orthogonal system should be used. McFee and Parungao's[2] might turn out to be the best because they are free from the assumption that the heart is a fixed dipole in space.

The easily measurable varying characteristics of the moving vector record are magnitude, direction and velocity of rotation of the head. The velocity of the spatial vector as it proceeds to create the vectorcardiogram in space is measurable. All these parameters can be measured or calculated for P Q R S or T by computer methods although the equipment required for some of them is quite intricate and expensive. There are however still problems in sampling instantaneous vectors if only eight[3] are determined during the Q R S interval and if four are used during the inscription of the S T segment and T wave. There is at least the theoretical possibility that some significant feature might be missed in the omitted intervals and this feature still has to be overcome.

The last step in the computer analysis of the electrocardiogram is the delivery to the physician of data that have been accumulated and processed. For clinical purposes perhaps the most desirable is a print-out as done by the group under Caceres.[4] This can be as simple or detailed as desired. Actually, the magnitudes of all deflections, the duration of all intervals and the direction of the planar vectors in the 12 standard leads can be printed and the computer so programmed that deviations from the normal will be indicated.[5] If the print-out is made to indicate not only the ECG diagnosis but the possible clinical significance it must be understood that this procedure is frought with potential error.

Of great interest to the electrocardiographer is that the time lapse from the time the information reaches the computer until it comes out in printed form consumes about four minutes and if fewer leads are found adequate, it would of course take less time.

Clearly the computer in electrocardiography is here. It has already contributed renewed efforts to obtain more perfect recording, emphasis upon high fidelity recording and on the need to eliminate redundancy in leads. Of course its contribution to statistical analysis, codification, quantitative differential diagnosis and speedy retrieval of information is also a valuable one. All this will mean that the computer will not eliminate the doctor, it will just make him learn more and improve his skill.

L.H.N.

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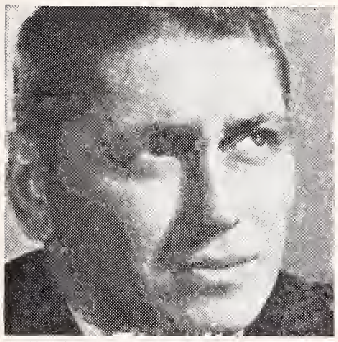
Towards A Theory Of Atherogenesis

We grow old at different rates in the different vascular beds of the body. This view was already emphasized by Rokitansky[1] over 100 years ago who described unequal participation of different vessels of the body in atherosclerosis. Why this should be so is not clear even today. It is not only not known for individuals; it is not known for people. For example, almost nothing is known of why the Japanese should have a higher incidence of lesions involving the central nervous system and a lower incidence in the coronary arteries than Americans in whom the distribution is said to be just the reverse. Neither is it known why mortality rates from cerebral vascular disease among some of the Bantu groups should be as high or higher than among most white populations.[2]

There is also a variation in localization of atheroma in the same genetic groups if they live in different environmental and cultural circumstances. Groom, et al.[3] studied 177 hearts and aortas in routine autopsies of Haitian and American negroes below the age of thirty. The study was well conceived to eliminate bias. The specimens were examined by the same pathologist who did not know the individuals age, sex and country of origin. Gross degrees of grading of atheromatous involvement disclosed that the previously observed greater incidence and severity of coronary artery disease among adults of the U.S.A. as compared to the Haitian extends down in age at least to adolescence. However, grades of the involvement in the aortas of the same subjects showed no quantitative difference between the Haitians and American negroes. In other words, Groom found a predisposition to coronary but not to aortic atherosclerosis among the American group.

A. M. Saslow—New Haven-Waterbury

E. J. Hale—Hartford



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Microscopic examination of the coronary vessels confirmed the results of previous studies[4] that a general progression occurs with age beginning with proliferative thickening of the intima, fraying and fragmentation of the elastica interna which begins in early childhood. The process was the same in both primitive and American negroes but of double incidence in coronary involvement in the latter. Clearly these changes represent early non-lipid phases of atherogenesis and emphasize the importance of directing investigative interest towards the early years of life. Apparently the approximately 2:1 proportion found previously in the later years of life does extend down at least to adolescence. However in early life the atheromatous changes are vascular "manifestations" rather than a disease, but there can be no doubt that they do represent the early stages of what later advances to occlusive arterial disease.

Intimal thickening does constitute the very basis for occlusive arterial disease beginning early in life. But the vessel grows in total caliber and therefore it is not easy to establish whether as it grows, regression takes place. Nevertheless, thickening does seem to increase with age to adult years and there is a strong parallelism between the incidence of intimal thickening and incidence of fraying and fragmentation of the elastica interna.

With the pathologic process well established and confirmed by others[5] how do we explain the variability in any individual vascular tree as well as the predelection for certain sites in differing populations. In medicine we like to think of a single cause for a disease, as for example, tuberculosis or typhoid fever and without doubt nature is much simpler than she appears to us before we have learned enough to put all the diverse information into a unified concept. At present there are many apparent causes and large gaps in our knowledge as regards the pathogenesis of atherosclerosis.

Some look upon the early stages of intimal thickening and damage to the elastica interna as brought about by a generalized and basic mechanism of tissue reaction to injury or to stresses of blood pressure and blood flow. These mechanical causes can be magnified by hypertension in which we find increased severity of the atheromatous lesion as well as predilection of these lesions for sites of turbulent blood flow, as for example the root of the aorta.

Some believe that early microscopic alterations lay the groundwork for hyalinization, mucopoly saccharide and then lipid deposition with ultimate calcification of the full blown placque of clinical coronary artery disease (CAD). They point to the higher incidence of CAD among people with high cholesterol and lipid blood levels.[6] They point to physical exercise as a protective factor[8] capable of negating the deleterious effects of a high calorie, high saturated fat diet through utilization of excess calories.

In recent years some intriguing evidence has come from this country and England that the hardness of potable water somehow protects individuals by retarding the progression of atherogenesis perhaps by the action of certain trace elements such as cadmium and zinc.[9]

Tobacco is definitely suspect and so are certain hematology factors relating to viscosity, blood clotting and fibrin deposition. Thus Burch and DePasquale[10] have observed that angina pectoris and myocardial infarction are extremely rare to almost non-existent in areas of the world where malnutrition and chronic anemia are prevalent, and common in those areas where the population is well fed, and free from parasitic infections. They even wonder if females owe some of their immunities to atherosclerosis during the reproductive years to the "normal phlebotomies" of menstruation which lowers the hematocrit readings, reduces viscosity and platelet adhesiveness, thereby altering the shear rate of blood flow.

Anyway one looks at it, the etiology of atherosclerosis appears exceedingly complex. But so does all nature to the unscientific mind. Once a unifying principle is conceived nature becomes much simpler. The real problem that emerges therefore is trying to fit together a host of isolated observations like pieces of a jigsaw puzzle in order to put into perspective any single observation and to understand its significance. It is possible now to understand the "grand pattern." Groom's study helps to lead the way.

First is the view that atherosclerosis begins in childhood even infancy and that the initial manifestations are non-lipid in character. Second, is the gross findings, that aortic atherosclerosis is uniformly distributed among Haitian and American negroes but that the latter has double the incidence of coronary atherosclerosis. Obviously, different vascular beds in the same individual vary in vulnerability, but different parts of the vascular tree are more vulnerable in some ethnic groups than in others.

Underlying vulnerability is thickened intima and fractured elastica interna, healing better in some than in others. Knowing the basic pathology we can begin to investigate how contributing factors like nutrition, smoking, hypertension, produce their deleterious effects and how protective factors like exercise, estrogen, thyroid, prevent or retard the process. Even though we have not gone the whole way, we have gone a long way from confusion towards order in understanding atherosclerosis.

L.H.N.

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The Scientist And Society

Scientists have in common at least three things: One is their method of seeking knowledge by the use of the scientific method. Another is their lack of interest in the more remote implications of their work. A third is that being a social animal, they are a product of numerous complex factors including their family life, social circumstances, cultural tradition, education and many others. This last is enough to introduce wide differences in values and outlook among the scientists themselves the world over. There are misunderstandings that arise about scientists, because of each of the three things they have in common.

One misunderstanding arises in those who suspect science and see a conflict between the knowledge produced by the scientist and some established system of belief. But since science is another word for knowledge it is obvious that knowledge can conflict only with ignorance. To be sure it is knowledge obtained in a particular way by application of the scientific method and it is easy for the non-scientist to blame the scientist as responsible in some way, not always understood, for many of our current problems. The fact is that scientists have in common their method of seeking knowledge in many diverse areas which makes contact between all of them virtually impossible. One may be studying light receding from a nebula, another the physiological clocks in animals and plants producing cycles in biology, a third may be investigating the atomic nucleus and anti-matter, a fourth may be studying the virus carrying capacity of mosquitoes in tropical forests.

The remote effects of such work vary from the origin of the universe, to storage of information by the brain to understanding cell behavior, the nature of the gene and the cancer cell. The immediate social effects may well be the elimination of a particular group of diseases resulting in an increase in population which may be bad in certain regions of the world where the population is already too great for its food supply.

The scientists can be first class yet not be interested in the remote implications of their work, if indeed they could foresee them which is unlikely. The fact is that scientists are not and should not be held responsible for the applications of their discoveries which rightly belongs to scientific technology which becomes a social function. The question of scientific responsibility was raised in its most urgent form by the development of nuclear weapons. The scientific knowledge which made possible the release of nuclear energy was achieved without thought of its ultimate consequences. The production of nuclear weapons became a different question than whether scientific knowledge is good or bad in itself. Scientists take for granted that it is good. Anyway they will continue to seek knowledge because the impulse to know is an inherent part of human nature.

It is however true that man does not sufficiently foresee the consequences of scientific discoveries. Anyway he has not the capacity to decide whether some particular line of scientific research ought to be abandoned because of its possible evil consequences to mankind. It is society that must be held responsible for what it does or fails to do with the scientists's discovery. Here, however, it must be emphasized that he does have a special responsibility as a member of society by virtue of his efforts and his knowledge to bring his views to bear upon those non-scientists who do make the decisions that affect the future of mankind.[1]

Besides dangers from nuclear weapons, there are other problems that come about as a result of pursuit by scientists of immediate ends which seemed obviously good in themselves. What could seem more desirable than abolition of small pox and malaria by vaccination and use of insecticides. However, the scientists who invented the anti-malarial drugs and insecticides and workers who distributed them do not think about the effects of their actions on population growth. Nor should they. Insecticides have increased crops in developing countries and are saving human lives from starvation. But what do we know of their unforeseen consequences? They destroy wild-life. Will they in minute quantities have remote deleterious effects on man? Should those who distribute these threatening materials be employed to do this without a scientific training and an understanding of scientific methodology? What will all this do to the population explosion?

In the course of evolution man has achieved his present dominant position because he has learned to use his intelligence as a survival instrument. But now some are arguing whether his invention of the atomic bomb and his growing influence over his environment has become a factor threatening rather than enhancing his chances of survival. What is really threatening the human race is its failure to integrate the diverse elements both social and scientific without which society must fail just as an individual fails when he is unable to integrate the diverse influences impinging on his own nervous system for the purpose of individual survival. In the latter case, integration is a physiologic function of the nervous system. In the former case, integration is a social function of the world societies.

Our present crises have been partly produced by the activities of scientists. Therefore scientists must seize every opportunity to bring home to those who make the practical decisions about social function the urgency of the problems unleashed by science that we all are faced with, and their true nature. Since decisions must be rational the scientist with his scientific method can be of great help and importantly contribute to their solution provided the non-scientist in authority is willing to set aside his prejudices and accept reason and knowledge as a method of solving social problems.

It is necessary that the non-scientists in authority must seek scientific knowledge since the scientist himself, far from wanting to impose his ideas upon other people, are often too little interested in the social implications of their work and too much occupied with his own search for knowledge to have time for political activities. On the other hand, the recent history of Hitlerism has shown that politicians may, if they get the power, strive to impose their pseudoscientific ideas upon the people they rule. Scientists therefore are faced with ethical decisions of whether and how far they should lend their aid to politicians who wish to gain control over human beings by influencing their minds on a scale and effectiveness that are unprecedented. As Sir Brain[2] points out "we must be alert to these dangers and remember if the price of liberty is eternal vigilance, vigilance without knowledge is blindfold." The doctor as scientist will do well to take these thoughts to heart and begin to think more, than he has, about the remote implications of his work and the need to use his knowledge and intelligence in guiding the architects (politicians) of our social structure away from prejudices and in the direction of reason and knowledge.

It is extremely hard and sometimes impossible to foresee far ahead the social and the technological consequences of any particular discovery, be it drug or biochemical or physical. Nevertheless we have to try to do it. Who will act as a bridge between society working as a whole and the scientists working in their many diverse fields. There is actually no existing machinery for extrapolation of a scientific discovery towards its social implications. Will it be the social scientist, the psychological scientist?

In the meantime science can do two things. It can challenge the emotional reactions of political leaders and which they use towards the people. We can recognize emotional reactions and insist they too are appropriate subjects for scientific inquiry. Second we can bring together scientists from diverse areas of knowledge as well as from other nations who are prepared to try not to take for granted the emotional attitudes but to look beyond them in search for the common interests of all mankind.

L.H.N.

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Myocardial Infarction And The Systolic Murmur

A systolic murmur is sometimes heard for the first time after an episode of myocardial infarction or even myocardial ischemia. Two developments have taken place in cardiology in recent years which make it worthwhile to establish the reasons why the murmur has occurred. One is that enough patients have been reported with such developments that have had pathological correlations to the clinical picture to help establish the basis for the *de novo* appearance of the systolic murmur. In addition, hemodynamic observation with cinefluorographic studies have been done in the living patient to clarify the physiologic basis for the physical finding. Another reason however is coming to the fore in the rapid advances in cardiac surgery. If we could correctly establish the reason for the systolic murmur, there may be some patients that could be cured by surgical repair of a developed defect.

The fact is that there are already some reports in the literature of successful use of cardiac surgery in repairing post-infarction defects. Shickman, *et al*[1] successfully repaired a ruptured ventricular septum complicating acute myocardial infarction. Payne, Hunt and Kirklin[2] also repaired a ventricular septal defect due to the same cause.

If there develops rupture of the interventricular septum, a murmur occupying the whole of systole appears often with a thrill and there generally develops rapidly progressive congestive failure. If the papillary muscle ruptured after an acute infarction, a murmur also occurs occupying the whole of systole and again rapidly progressive congestive failure ensues. In this type of case the murmur is due to mitral regurgitation since one or both valve leaflets are inoperative.

Rupture of a papillary muscle has now been reported in approximately 70 patients, cardiac failure is rapid in onset and usually profound. The prognosis is grave. One third of the patients die almost immediately. One half will die within twenty-four hours and less than 20 per cent survive the second week. The occurrence of such a catastrophe is quickly diagnosed by the appearance of a loud holosystolic murmur over the precordium as high up as the aortic area. This permits the physician to recognize the occurrence of a catastrophe and a grave prognosis.[3,4,5]

Rupture of the interventricular septum accounts for the death of one in a hundred patients with acute infarction. This catastrophe has now been reported in 200 patients,[6] occurs within four to eleven days after infarction and before organization occurs. It most commonly involves the anterior and inferior aspects of the septum. When it occurs right ventricular function is impaired and right ventricular failure and tricuspid insufficiency develops. The intensity of the murmur is greatest in the fourth space along the sternum, occupies the whole of systole but will depend upon how big the defect in the septum really is. Obviously attempts at surgical repair should not be done while the tissue is soft and sutures will not hold. Although the prognosis is very poor, isolated cases of prolonged survival do occur and as has been mentioned above, successful repair in such cases have been reported. Survival without repair has also been reported by Landale and Schlappi.[7]

Myocardial infarction or myocardial ischemia alone can lead to papillary muscle dysfunction and acute dilatation of the left ventricle. Here congestive failure need not be a prominent part of the clinical picture but while the mitral valve is incompetent a systolic murmur will appear not as abruptly in onset nor as profound as that seen in patients with rupture of intracardiac structures. Furthermore, the dysfunction of the papillary muscle may be transient in which case the systolic murmur is known to disappear. The systolic murmur in this type of case is often restricted to middle or late systole and has a much better prognosis. Phillips, *et al*[8] have recently reported thirteen such cases, all of whom developed a middle or late systolic apical murmur following an episode of severe coronary insufficiency or myocardia infarction. The murmur has been established to be due to significant mitral insufficiency found also in one autopsy.[9] Orlando[10] described fifteen patients with papillary muscle dysfunction. Eight, studied post-mortem, showed either anterior or posterior papillary muscle infarction and half developed congestive failure.

Acute ventricular dilatation will also be accompanied by *de novo* appearance of a systolic murmur following an episode of acute myocardial infarction or insufficiency. The murmur will disappear as the dilatation subsides, just as it disappears in papillary muscle dysfunction, if the papillary muscles recover their viability. The explanation for the development of the systolic murmur in acute dilatation is now only speculative. Some believe the mitral ring is dilated and the valves become incompetent. Others hold that the base of the papillary muscles have separated and the chordae tendinae cannot allow valve closure.

One of Holloway's patients[10] who did not survive an operation five weeks after a rupture of the septum did not show evidence of infarction in the electrocardiogram. This is not surprising since it has been known since Kisch, Nahum and Hoff showed in 1940 that mostly surface effects are registered in the electrocardiogram.[11,12]

Now that corrective surgery is theoretically possible, a precise functional and anatomic diagnosis should be made in all patients developing a systolic murmur. Even if an operation is not indicated, the understanding of the origin of the systolic murmur that develops after infarction has prognostic significance that may be important in predicting the outcome in all such cases.

L.H.N.

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Coronary Artery Disease And Surgery

The total number of deaths from cardiovascular and renal disease rose from 769,751 in 1950 to 993,000 in 1963. This means that we have more aged people and that the death rate from arteriosclerotic heart disease continues to increase. Obviously because of the increasing life span and the number of patients with degenerative cardiovascular disease, the number of this type of patient who has to undergo surgery will also continue to increase. It is therefore imperative that we realize what are the problems that need clarification, whenever an aged person is faced by a necessary operation. One such problem is to what extent is the presence of coronary heart disease a prejudicial factor in surgery and anesthesia? Another unanswered question is when would it be fairly safe to undergo an operation after a patient has recovered from acute myocardial infarction? A third question is to what extent is the risk of an operation increased by the existence of a post-myocardial scar? A fourth question is how important is the patient's age and other as yet unspecified factors in the final outcome?

There is no doubt that the factors affecting the defenses of the body become impaired with advancing age. Atherosclerosis becomes more pronounced and this leads to decreased cardiac reserve and an increased susceptibility to shock or hypoxia. Chronic pulmonary diseases, especially emphysema, are frequently present producing an impairment of pulmonary function. Often the blood volume is reduced especially in patients taking saliuretic drugs. These factors are enough to explain the poor response to the stresses of anesthesia and operation in such patients. If one considers the general mortality at all ages from anesthesia and operation, it ranges between 1-2 per cent. In 605 surgical patients over age 70 without coronary artery disease, Arkins, et al.[1] found a mortality of 10.8 per cent. The mortality among 805 elective coronary cases was 18.3 per cent. If the case was an emergency the mortality was still higher, 86 deaths among 190 patients or 45.2 per cent. The answer then to question one above is clear. Patients with coronary artery disease are definitely poorer surgical risks than those without this condition.

The explanation for this becomes clear from an analysis of dangers of surgery after acute myocardial infarction and from an analysis of the factors responsible for the higher mortality rates. We know that the healing time of myocardial infarction is up to three months but most heal after two months and undergo little change after that.[2] Obviously unless life is threatened, one should not perform an operation upon a person before three months has elapsed after suffering a myocardial infarction. The explanation for such a judgment is found in analyzing the causes of post-operative deaths in patients with coronary artery disease. Twenty-six died of post-operative myocardial infarction, 75 from cardiovascular collapse (shock); 66 from pulmonary complications; 31 from surgical complications, and 21 from infection, cerebral hemorrhage or thrombosis. There were 11 deaths among 27 patients with recent preoperative infarction (40 per cent). There were 54 deaths among 240 patients with infarction, 3 months or more prior to operation. Finally, myocardial infarction occurred post-operatively in 55 patients of whom 38 died (69 per cent). Clearly coronary artery disease represents a serious hazard to a patient undergoing surgery.

The myocardial infarction that follows operation may be even more frequent than is generally suspected as demonstrated by Driscoll[3] and others who found that clinically unrecognized cases of infarction occur fairly often in patients over 50 years of age as demonstrated by serial electrocardiograms. One of the major factors in death following such infarction is hypotension, especially if it goes on to clinical shock. It must always be kept in mind that cardiac ischemia due to hypotension or inadequate circulating blood volume may itself be the cause of myocardial necrosis which may develop even in the absence of obstructive coronary pathology. Hypotension and impaired coronary blood flow can also occur with very rapid heart rates, very slow rates and markedly irregular heart rates[4] and their presence does exercise an unfavorable influence on morbidity and mortality.

Mortality rates increased in direct relationship to the length of the operation. Thus a high rate of complications and death followed operations on the gastro-intestinal tract where the procedures are long; whereas operations on the genito-urinary tract in which the duration was shorter had the most favorable outcome. Furthermore, the operations performed with spinal anesthesia were followed by a lower mortality.

It is clear enough that the presence of coronary artery disease increases considerably the mortality in the event of surgery and in the older age group this diagnosis should be searched for and established. The mortality is very high after recent myocardial infarction and operations should not be performed within three months of the onset of infarction unless absolutely necessary. Post-operative myocardial infarction is a most serious complication and is followed by a high incidence of death. The surgical team must be on the alert to prevent blood loss, to combat hypotension, to quickly control cardiac irregularities and avoid prolongation of the operation, and wherever possible employ spinal or epidural anesthesia.

We have thus from a careful statistical study by Arkins, et al arrived at a clearer understanding about the dangers to the patient with coronary artery disease who is faced with the need to undergo surgery. Cooperation between surgeons and physicians will lead to clear diagnosis of the existence of coronary artery disease and the pre- and post-operative measures needed to reduce mortality. In elderly patients careful post-operative study including serial electrocardiograms will reveal and help to eliminate the factors which greatly prejudice the outcome in such patients.

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Oral Prolonged-Action Drugs

Approximately 10 per cent of oral drugs are available in formulations which are claimed to exhibit sustained or prolonged action; they usually contain the equivalent of three or four doses of ordinary tablet or capsules. Sustained-action products must be distinguished from ordinary-dose, enteric-coated formulations intended to pass into the intestine without disintegration in the stomach.

Types of Prolonged-Action Preparations — Prolonged-action products are of various types. Some consist of encapsulated beads with coatings that dissolve at different rates, such as Spansule capsules (SK&F); others consist of granules in tablets, such as Spacetabs (Sandoz); drugs in ion-exchange resin complexes, such as Biphetamine capsules (Strasenburgh); multiple-layer tablets, such as Pen-Vee L.A. Tablets (Wyeth); or drugs in inert porous solids, such as Gradumets (Abbott).

No generalization about the predictability of the rate of disintegration or dissolution of sustained-release drugs is possible. Pharmaceutical companies differ in quality-control standards in the manufacture of such products. Furthermore, the rate of drug release from any formulation, short-or long-acting, varies a great deal from person to person and in the same person at different times. Assuming that the highest standards of manufacture prevail and that uniform, sustained release does occur, the first question that arises is whether such products necessarily have real advantages over conventional formulations.

Pro and Con—The most obvious advantage of prolonged-action products is their convenience. They eliminate the necessity for frequent administration and reduce the likelihood of patient error in failing to take medication. Antihistamines and anticholinergic drugs, for example, can often be used advantageously in prolonged-action formulations. On the other hand, there are instances in which the use of prolonged-action products is not warranted. If quick action is needed, as with quinidine, for example, the conventional tablet or capsule is usually preferred for its more rapid absorption and usually higher initial peak levels. Some drugs are intrinsically long-acting, with a biological half-life of 10 to 12 hours or more, and there is no need for special prolonged-action formulations. Among these are phenobarbital (offered as Eskabarb Spansules—SK&F), meprobamate (Meprospan-Wallace), and reserpine (Eskaserp Spansules—SK&F).

Side Effects—The sustained-action from of a drug is often claimed to reduce gastrointestinal side effects, though such claims are not always supported by controlled trials. An important disadvantage is that hypersensitivity reactions and other side effects are also prolonged and, therefore, may not be managed as expeditiously as with the short-acting formulation.

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The Diagnostic Significance Of The Ph^1 Chromosome*

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Introduction

■ Each new concept of a disease and each new diagnostic test must be integrated into the total picture of the disorder. In the case discussed below, the conclusive diagnosis of chronic myelocytic leukemia was made by studying the karyotypes of dividing cells in the bone marrow. The present report is designed to clarify the roll of chromosome studies in the diagnosis of chronic myelocytic leukemia (CML) and to outline the significance of the Philadelphia chromosome (Ph^1) in the pathogenesis of this disease.

Case Report

A.F., a 43-year-old Negro male, was admitted to the West Haven Veterans Administration Hospital in May, 1964, for drainage of an ischiorectal abscess. His temperature was 100.6° F., but physical examination was otherwise unremarkable. Laboratory data revealed a hematocrit of 44 per cent, hemoglobin 14g. per cent, platelets 750,000, and WBC 90,000 with a marked shift to the left:

Differential	
Myeloblasts	1
Promyelocytes	2
Myelomytes	8
Metamyelocytes	10
Bands	12
Neutrophils	65
Lymphs	2

Leukocyte alkaline phosphatase score on admission was elevated at 110 units (normal 10 to 75).** Bone marrow examination revealed a marked myeloid hyperplasia and eosinophilia and was compatible with the diagnosis of CML. The ischiorectal abscess healed without complication following drainage.

Although the initial impression was that of a myeloproliferative disorder, a definite diagnosis of chronic myelocytic leukemia was not entertained because of the lack of anemia or splenomegaly and the elevated alkaline phosphatase score. The laboratory tests remained unchanged except for a fall in the leukocytic alkaline phosphatase to 0 in August and 10 in November and a fall in WBC from 90,000 to 50-60,000. His course has remained uncomplicated, no splenomegaly or anemia have developed, and he has received no therapy. Although the fall in leukocyte alkaline phosphatase scores made the diagnosis of leukemia more likely, the final diagnosis was established by the finding of the Ph^1 chromosome in the bone marrow in November, 1964.

Chromosone Studies

The bone marrow was incubated with colcemide† (5 x 10^{-5} M) and media 199 for two hours, the cells treated with Hanks hypotonic salt solution, fixed in methyl acetic acid and air-dried. In all of the scoreable cells, the Ph^1 chromosome was present (Table I). Cultures of peripheral leukocytes (without phytohemagglutinin) also revealed cells containing the Ph^1 chromosome.

Discussion

Noel and Hungerford in 1960 described the presence of a minute chromosome and absent small acrocentric chromosome in two male patients from Philadelphia with chronic myelocytic leukemia.[2] The Ph^1 chromosome is named after the city in which it was discovered and is the first specific abnormal chromosome to be associated with a particular type of tumor. It probably results from the deletion of one half of the long arm of a satellited chromosome in group ♯21-22 (probably ♯21). Approximately 1/200 of the total DNA of a cell is deleted. It is possible, however, that this chromosome material has been translocated onto another

TABLE I

CHROMOSOME COUNTS (MARROW)

	44	45	46	47
Number of cells		1	49	0
Number scorable cells*			33	
Number Ph^1 present			33	

* A "scorable" cell is one in which the presence or absence of the Ph^1 chromosome could definitely be determined. In no case was a definitely normal karyotype found.

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** In the Kaplow score (1) 100 consecutive polymorphonuclear leukocytes are rated from 0 to 4+ by the intensity of staining. The sum of 100 ratings is considered the "score" for a particular smear.

† Kindly supplied by CIBA Laboratories.

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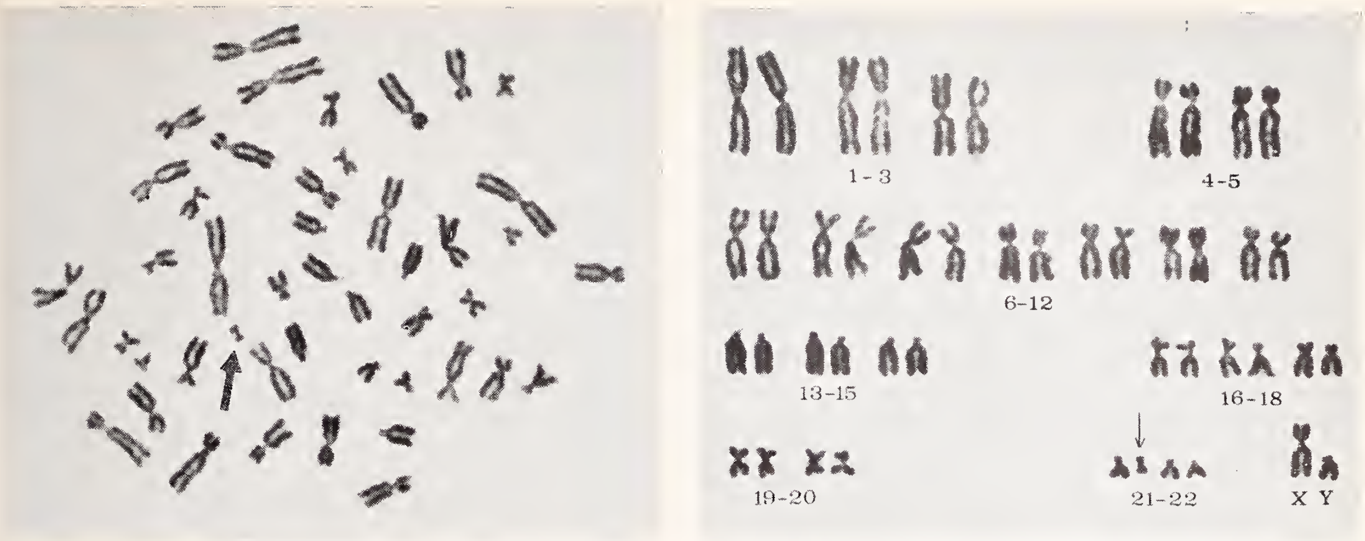

FIGURE 1

a. Metaphase cell from the bone marrow showing the Ph[1] chromosome.

b. Karyotype of the same cell. Approximately ½ of the long arm of a chromosome in the No. 21-22 group has been deleted.

larger chromosome where it can not be detected by current techniques. The Ph[1] chromosome is nearly symmetrical in appearance, and, as shown in Figure I, it is easily recognized and distinguished from the normal chromosomes. Because of its presence both in early cases and in over 90 per cent of all cases of CML, it is felt that this deletion is either the cause of CML or intimately associated with its pathogenesis.[3] The chromosome complements of other than haemopoetic cells are normal, and the deletion is not, therefore, inherited.

Initially, a number of cases were studied in which the Ph[1] chromosome was not found in the peripheral blood, but these early cases must be interpreted in the light of subsequent knowledge regarding the behavior of Ph[1] containing cells in tissue culture. It is customary to harvest cultures of peripheral leukocytes on the third day, because the lymphocytes undergo mitosis only rarely before 48 hours. In contrast, the Ph[1] containing granulocytes divide much more frequently during the first 48 hours, and may be missed at three days. In addition, lymphocytes divide only rarely in tissue culture without the addition of phytohemagglutinin mature granulocytes not at all, and Ph[1] containing granulocytes divide without the addition of phytohemagglutinin. Therefore, the Ph[1] chromosome is best found in peripheral blood during the first 48 hours without the addition of phytohemagglutinin. Moreover, as will be discussed later, the Ph[1] chromosome containing cells may be absent even under these conditions, but present in the bone marrow. In most of the Ph[1] negative cases, the Ph[1] chromosome was found when restudied under one of these conditions but a few cases are completely Ph[1] negative. A few adult cases meet these criteria.[3,4,5] In some, the course has been clinically indistinguishable from those cases which were Ph[1] positive.[4] In one Ph[1] negative adult the course has appeared to be more rapid.[6] Only two of the 27 cases reported from Edinburgh[4] and two of 26 cases reported by Speed and Lawler[5] were found not to have the Philadelphia chromosome. In contrast, it is absent in approximately one-half of the children with CML.[7,8] In general, children over three years of age are Ph[1] positive, and the extremely rare cases in younger infants are Ph[1] negative. Certain clinical differences have been suggested by the few cases reported in children and the Ph[1] negative children appear to have a somewhat more rapid course, are resistant to Myleran but respond to 6-mercaptopurine, and have more hemorrhagic complications. These studies suggest that CML can be divided into two entities by chromosome studies. In the most common form the Ph[1] chromosome is present. This occurs in over 90 per cent of the adult cases and in the older children. The Ph[1] negative form occurs rarely in adults and commonly in children under two or three years of age and may follow a more rapid course.

Leukocytes in peripheral smears are often stained for alkaline phosphatase to aid in the differential diagnosis between a leukemoid reaction and chronic myelocytic leukemia. CML cells customarily have little or no stainable alkaline phosphatase. A few cases, however, which have also been shown to have the Ph[1] chromosome have had a normal level of stainable alkaline phosphatase. In several of these cases, as in the present case, significant infection was found to be present. When the infection cleared the alkaline phosphatase staining decreased. In one case, for example, therapy with Myleran was stopped because of the finding of a high alkaline phosphatase score, but the patient was subsequently found to have active ulcerative colitis and the alkaline phosphatase score was low normal when it was brought under control.[9] Whether the increase in alkaline phosphatase staining is due to increased numbers of normal polymorphonuclear cells, or an increase in staining of leukemic cells is unclear. It was originally suggested that a locus concerned with production of alkaline phosphatase was present on the deleted portion of ♯21, but the lack of alkaline phosphatase staining in those cases without the deletion of the chromosome ♯21 makes this extremely unlikely.[7]

In a number of instances it has been noted that the Ph^1 chromosome disappears from the peripheral blood during periods of remission following Myleran or X-ray therapy. In nearly all of the cases, however, the Ph^1 chromosome is found in a great majority of the dividing cells in the bone marrow, even during these periods of remission.[3] This was initially quite puzzling. However, in 1963 several groups of investigators offered the explanation that this was in part, at least, due to the presence of the Ph^1 chromosome in erythroid precursors as well as myeloid cells.[10, 11] The direct proof of this, the identification of both hemoglobin and the Ph^1 chromosome in the same cell, has not been accomplished for technical reasons. It has, however, been shown that in patients with no cytological evidence of leukemia 30-80 per cent of the dividing cells in the marrow were erythroid and contained hemoglobin either by Giemsa staining or absorption at 4,100 angstroms. It was reasoned that if at these times 100 per cent of the dividing cells were found to have the Ph^1 chromosome, it must then be present in erythroid cells. In addition, a number of polyploid cells ranging from 2n (46 chromosomes) to 16n also contained the Ph^1 chromosome in an appropriate multiple. Since it is known that the megakaryocytic series is often polyploid, it was postulated that the Ph^1 chromosome was present in this series. It is possible that the Ph^1 chromosome may arise in a stem cell which is a precursor to all three lines.

In one case, however, it has been demonstrated that the Ph^1 chromosome was derived from multiple cells. A case of Klinefelter's syndrome with XXY/XY mosaicism in the peripheral blood and chronic myelocytic leukemia has been reported.[12] Both cell lines contained both a normal chromosome complement in some cells and the Ph^1 chromosome in other cells. Since the XXY/XY mosaicism probably developed during the first few cell divisions of embryonic life of this patient, it is extremely unlikely that the Ph^1 chromosome deletion occurred at that time since leukemia was not present for several decades. The most likely conclusion from this case, therefore, is that the deletion occurred in multiple cells (some XXY, some XY) a few years before the development of leukemia. Whether chromosome ♯21 (or ♯22) is particularly susceptible to breakage at this point or whether some agent or different agents are particularly likely to break this chromosome in the middle of the long arm is unclear. A spontaneous break in ♯21 or ♯22, however, is a relatively rare occurrence and has been found in only one of 600 cells observed for chromosome breaks.[13] This case has great significance for concept of the pathogenesis of cancer and should be considered as proof of the multiple cell origin of cancer in at least one patient.

Summary And Conclusions

The Ph^1 chromosome occurs in the myelocytic and erythroid and probably megakaryocytic cells of nearly all adults and older children with chronic myelocytic leukemia. Children under the age of two usually do not have the Ph^1 chromosome and perhaps tend to run a more severe and rapid course. Although the diagnosis of CML can usually be made by routine blood and marrow studies, the chromosome complements of as many cases as possible of CML should be studied prior to therapy in order to acquire more information about the few Ph^1 negative cases and determine the validity of the division of CML into two clinical entities. In some instances of CML the peripheral leukocytes contain a normal amount of alkaline phosphatase but this is most commonly due to the presence of a concomitant infection. Investigation of the chromosome complement of the bone marrow cells or peripheral blood can offer a positive differential diagnosis between chronic myelocytic leukemia and leukemoid reactions except in those few cases which are Ph^1 negative. A case is reported in which the conclusive diagnosis of chronic myelocytic leukemia was made by identifying the Ph^1 chromosome in the marrow and peripheral blood. The leukocyte alkaline phosphatase score was elevated when the patient had an ischiorectal abscess, but subsequently fell to low values.

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"The Methodology Of Science"

Science as something existing and complete is the most objective thing known to man. But science in the making, science as an end to be pursued, is as subjective and psychologically conditioned as any other branch of human endeavor—so much so that the question, What is the purpose and meaning of science? receives quite different answers at different times and from different sorts of people.

It is, of course, universally agreed that science has to establish connections between the facts of experience, of such a kind that we can predict further occurrences from those already experienced. Indeed, according to the opinion of many positivists, the completest possible accomplishment of this task is the only end of science.

I do not believe, however, that so elementary an ideal could do much to kindle the investigator's passion from which really great achievements have arisen. Behind the tireless efforts of the investigator there lurks a stronger, more mysterious drive: it is existence and reality that one wishes to comprehend, But one shrinks from the use of such words, for one soon gets into difficulties when one has to explain what is really meant by "reality" and by "comprehend" in such a general statement.

When we strip the statement of its mystical elements we mean that we are seeking for the simplest possible system of thought which will bind together the observed facts. By the "simplest" system we do not mean the one which the student will have the least trouble in assimilating, but the one which contains the fewest possible mutually independent postulates or axioms; since the content of these logical, mutually independent axioms represents that remainder which is not comprehended.—Albert Einstein. *Essays in Science.* New York, Philosophical Library, Inc., 1934, p. 112.

Primary Carcinoma Of The Ureter

Paul R. Fleisher, M.D., and Maxwell Malament, M.D.

■ Although primary carcinoma of the ureter is uncommon, recent accounts have reported an increasing incidence of this tumor, no doubt due to improved diagnostic technique and awareness of this disease.[1,2]

Pathology of primary ureteral tumors arising from the epithelium was described by Moore and Anderson.[3-5] Making up the largest group of ureteral tumors were the simple transitional cell papillomas and papillary or solid transitional cell carcinomas. Less frequent forms were squamous cell carcinomas, and adenocarcinomas.[6] Fibromas, leiomyomas, leiomyosarcomas,[7,8] hemangiomas,[9] and lymphangiomas,[10] of the ureter have been reported.[11,12]

Malignant tumors predominate over benign, four to one.[11,13] Primary tumors are most common in the sixth decade of life and are more frequent in men than in women.[11] The tumor is usually situated in the lower third of the ureter.[12,14-16]

Metastatic carcinoma of the ureter is not infrequent and may simulate a primary lesion.[17] The ureters may be involved, more often by direct extension from para-aortic lymph nodes than by the hematogenous route. Although the cause of neoplasms in the genito-urinary tract is unknown, there are several underlying etiological factors such as chronic infection, mechanical irritation by stone or parasite, congenital predisposition, and exogenous or endogenous carcinogens.[18]

Since the epithelium of the renal pelvis, ureter and bladder consists of transitional epithelium, tumors in these areas have a similar histological picture and have been found concurrently. This may be attributed to one of the following factors: 1. Direct implant in the urothelium by tumor cells from a higher lesion: 2. The multi-centric theory suggested by Ewing which implies that carcinogens in the urine give rise to tumors in many places in the genito-urinary tract: 3. Spread of tumor via the veins and lymphatics: 4. Direct extension af a renal pelvis mass into the ureter or from ureter to bladder.[13]

Hematuria, the most common symptom, may be very extensive or occur in a single episode.[19,20] Due to progressive ureteral obstruction or passage of blood clots, dull flank pain or severe renal colic may develop.

The diagnosis of carcinoma of the ureter should be considered when hematuria is associated with a non-functioning or hydronephrotic kidney.[15] Corroboration is made by retrograde pyelography. When hematuria is noted on introduction of a catheter into the ureter, which is Chevacssu-Mock's sign, one should suspect ureteral carcinoma. If the bleeding suddenly clears indicating that the tumor has been passed, Marion's sign is evident.[18,21] Dilation of the ureter proximal to the tumor is variable and the roentgenographic appearance, suggesting an inverted goblet, is often characteristic of a tumor.[22-24]

At present, surgery is the only recommended treatment for this tumor. When the opposite kidney functions normally, nephroureterectomy with excision of a cuff of the bladder which includes the entire intramural ureter and orifice is the treatment of choice. Nephroureterectomy alone is not sufficient since Kender and Wallace found a 33 per cent recurrence of tumor in the intramural portion of the ureter and a 29 per cent recurrence or development of new foci in the bladder.[25]

Radiation therapy in ureteral carcinoma is not considered feasible because of the immediate complication of edema and the possible late complication of cicatrization, both causing obstruction to the upper urinary tract.

The prognosis depends on the extent of infiltration into the wall of the ureter and character of the cell. The outlook is generally poor since the growth is slow and insidious, giving rise to late symptomatology.[17,26]

During the past eleven years 11 cases of primary carcinoma of the ureter have been found. (Table I) The patients range from 49-73 years of age, with an average of 61.4 years. Solitary ureteral lesions were found in two cases and multiple ureteral tumors in one case. Lesions in the ureter and bladder were demonstrated in five patients and malignant tumors in the renal pelvis and ureter

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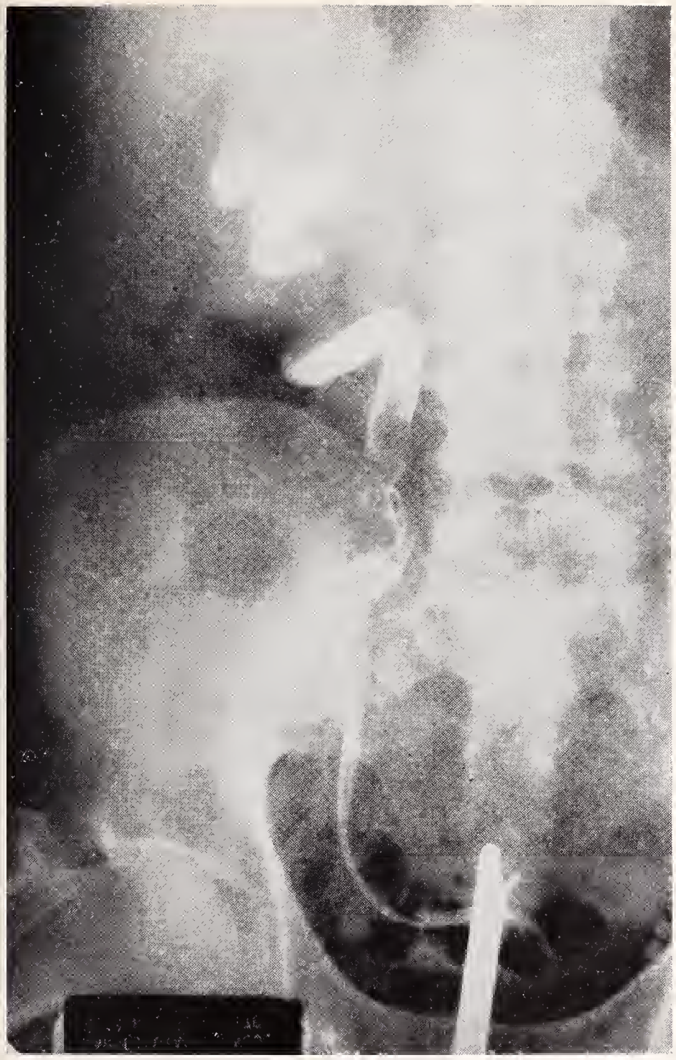

FIGURE IA
Retrograde pyelography reveals ureteral filling defect and hydronephrosis.

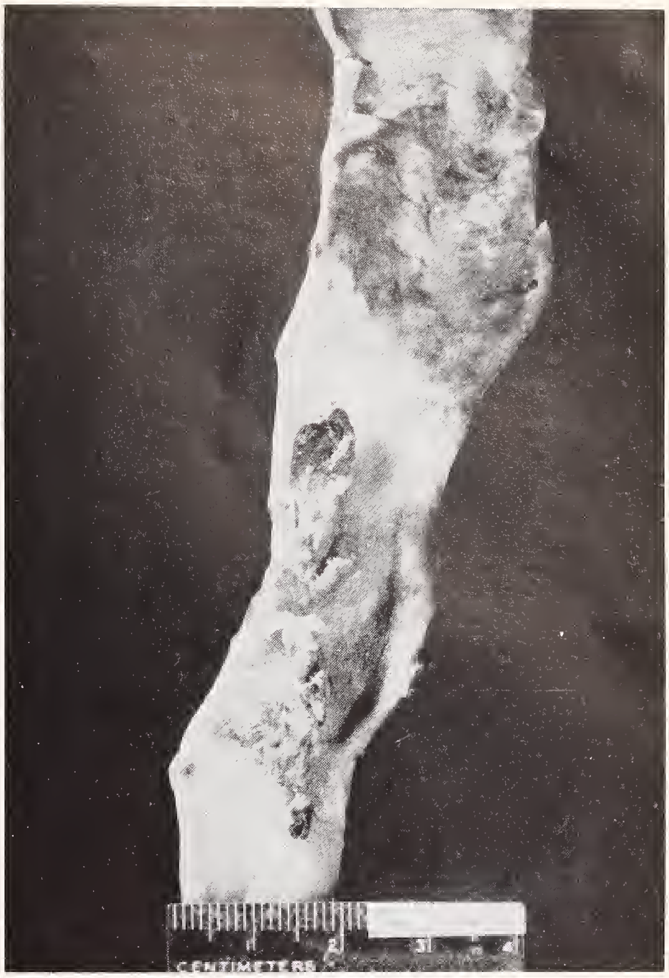

FIGURE IB
Surgical specimen shows ureteral tumor.

in three cases. Eight neoplasms were located on the right, while three were on the left side. The tumor was found in the lower third of the ureter in nine cases and upper third in two cases. The histological sections revealed 10 lesions to be transitional cell carcinoma, and one was squamous cell carcinoma.

Interesting features of several cases will be briefly summarized. Case No. 6 was treated for ten years for recurrent superficial bladder papillomas. An intravenous pyelogram during the last admission revealed filling defects in the right renal pelvis and upper third of the right ureter. A nephrectomy was performed, but the patient developed cardiac arrest when turned from lateral to supine position for excision of the lower ureter and bladder cuff. All attempts at resuscitation were unsuccessful. Case No. 10 had a segmental resection for a bladder tumor. When he entered this hospital, examination revealed a non-functioning kidney and an extensive bladder tumor. At surgery, an ileal conduit and cystectomy were performed, and the lower third of the ureter was discovered to be filled with tumor. Case No. 5 and Case No. 7 had pelvic and ureteral lesions. Both had a nephroureterectomy with bladder cuff excision. Case No. 5 died 3 years after surgery and No. 7 six months after surgery both with distant metastasis. Their demise was considered to be the result of the renal pelvis tumor which was infiltrating, rather than the ureteral lesions which were reported as superficial and non-invasive.

Case No. 8 had a nephroureterectomy without removal of the intramural ureter. Papillomatous recurrence developed within the intramural portion of the ureter and presented itself at the orifice on follow-up cystoscopy. Transurethral resection and fulguration were accomplished, but when this tumor recurred two and one half years later, exploration of the area was done and extensive regional metastases were found. This patient was lost to study but is assumed expired. Case No. 9 and No. 11 had a nephrectomy and partial ureterectomy for ureteral tumors and entered this hospital with symptoms of gross hematuria. Cystoscopy revealed bladder neoplasms in both patients, and on exploration extensive recurrent tumors were found in the remaining ureteral stumps.

Discussion

Review of the literature and the present series of eleven cases indicate that neoplasms of the ureter may occur concurrently with similar lesions in the bladder and renal pelvis.[20] There is no doubt that this is due to the fact that transitional cell epithelium is common to these three areas and that the etiologic factor producing the neoplastic metaplasia can initiate a single focus or multiple foci in the transitional cell mucosa. In this series only two cases had solitary ureteral tumors, while nine cases demonstrated similar lesions in the renal pelvis, bladder, and in the ureter itself.

However, there have been isolated reports, recently of segmental resections of ureteral tumors or local excision of pedunculated polyps with or without fulguration.[5,27] These may be isolated temporary successes, but one can't help wondering about late recurrences, not only in the ureter, but perhaps new foci in the renal pelvis or bladder.

Of the three cases in our series (numbers 8, 9 and 11) treated by other than radical surgery, two are deceased while the last case (No. 11) is alive but has soft tissue metastases. Perhaps these cases are the unsuccessful patients, but one can only question the scarcity of reports describing similar

TABLE I

CASE	AGE	INITIAL SYMPTOMS	DIAGNOSIS	SITE & SIDE	TREATMENT	PATHOLOGY	ALIVE	HOW LONG
1	69	Hematuria, non functioning rt. kidney	Ca. of the ureter	Rt. lower third	Nephroureterectomy with cuff	Trans. cell, non invasive	Yes	4 yrs.
2	71	Hematuria, lt. flank pain, rt. hydronephrosis	Ca. of the ureter	Rt. lower third	Nephroureterectomy with cuff	Trans. cell, non invasive	Yes	5 yrs. 5 mos.
3	51	Hematuria, rt. hydronephrosis	Ca. of the ureter	Rt. upper third and rt. lower third	Nephroureterectomy with cuff	Trans. cell, non invasive	Yes	5 yrs. 6 mos.
4	59	Hematuria, non functioning rt. kidney, (fig. I)	Renal ca.	Rt. lower third and renal pelvis	Nephrectomy, ureterectomy with cuff two months later	Trans. cell, non invasive	Yes	4 yrs. lost to to study after this time. No known metastases
5	67	Hematuria, non functioning lt. kidney	Ca. of the ureter	Lt. lower third and renal pelvis	Nephroureterectomy with bladder cuff	Trans. cell non invasive	No	3 yrs. P.O. from metastases
6	73	Hematuria, rt.	Bladder tumor	Rt. upper third and renal pelvis	TUR & Fulg. for 10 years for recurrent bladder lesions. Nephrectomy	Trans. cell invasive	No	Cardiac arrest during surgery
7	70	Wt. loss, back pain, non funct. lt. kidney	Renal ca.	Lt. renal pelvis and ureteral Orifice	Nephroureterectomy with bladder cuff	Trans. cell non invasive	No	6 mos. P.O. from metastases
8	56	Hematuria, non funct. lt. kidney	Ca. of ureter	Lt. lower third	Nephroureterectomy, No bladder cuff, exploratory 2 yrs. later	Squamous cell invasion	No	2 yrs. 3 mos. lost to study known to have regional metastasis
9	53	Non funct. kidney rt. 6 yrs. P.O. nephrectomy, hematuria & bladder tumor	Ca. of ureter and bladder	Rt. lower third	Nephrectomy 1956, Ureterectomy with cuff, 1963	Trans. cell invasive	No	8 mos. after 2nd op. from metastases.
10	58	Hematuria, non functioning rt. kidney	Ca. bladder	Rt. lower third and bladder tumor	Segmental resection 1962, Ileal Conduit and cystectomy, 1963	Trans. cell, no invasion	No	2 wks. P.O. from gram (-) septicemia
11	49	Hematuria, nephrectomy for ureteral tumor 1 yr. ago, recurrent bladder tumor	Ca. of bladder	Rt. lower third, and bladder tumor	Nephrectomy with partial ureterectomy, 1961. Ileal Conduit and cystectomy, 1962	Trans. cell no invasion	Yes	2 yrs. P.O.

unsuccessful results following local excisional surgery. Radical surgery, which includes kidney, ureter, intramural ureter, ureteral orifice and adjacent bladder cuff should be the recommended surgical procedure of choice.

Conservative surgery that is, local excisional surgery, should only be considered in the presence of a solitary kidney, when there is functional renal impairment on the other side, or when bilateral tumors are found.[27-29]

Invasion of the submucosa or ureteral muscular coat indicates a grave prognosis.[26] This coincides with the experiences in bladder neoplasms. The concurrent presence of renal pelvis carcinoma with a ureteral tumor diminishes the chances of survival. Renal pelvic tumors alone, have a 20 per cent five year survival, but when associated with a ureteral tumor the prognosis is much worse.[24]

The post operative follow-up for ureteral tumors should include intravenous urography and cystoscopy, since 73 per cent of the cases in this small series revealed a multiplicity of lesions involving either the bladder or renal pelvis and did not always occur simultaneously.

Summary

A series of eleven cases of carcinoma of the ureter are presented. The age and tumor distribution coincide with prior published series. Pertinent data in reference to diagnosis, tumor types, and treatment are recapitulated.

Renal non-function, hydronephrosis, or ureterectasis without calculi must be investigated for presumptive ureteral carcinoma. Patients with bladder tumors should be examined for possible ureteral lesions. Findings indicate that surgery of choice should be nephroureterectomy with excision of a cuff of the bladder, unless the opposite kidney is absent or suggests decreased function.

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Reduction of propulsive motility with Lomotil relieves spasm and cramping, allows physiologic absorption of fluid and reduces frequency of evacuations to provide prompt, symptomatic control of virtually all diarrheas.

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Each tablet and each 5 cc. of liquid contains:

diphenoxylate hydrochloride (Warning: May be habit forming)	2.5 mg.
atropine sulfate	0.025 mg.

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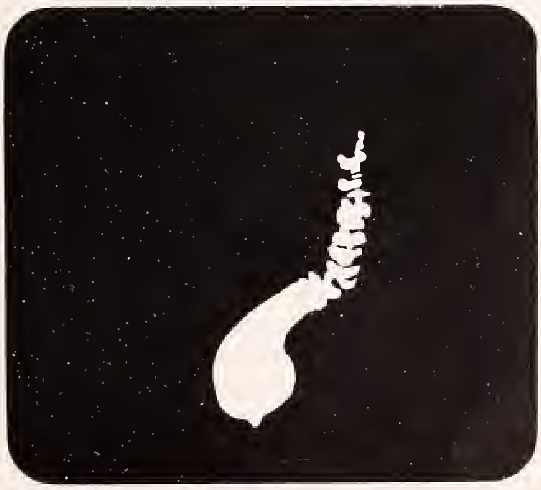
slows propulsion

relieves distress

stops diarrhea



Precautions: Lomotil is an exempt narcotic preparation of very low addictive potential: more than three million prescriptions have now been written for Lomotil. Recommended dosages should not be exceeded. Lomotil should be used with caution in patients with impaired liver function and in patients taking addicting drugs or barbiturates.

Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness and insomnia.

Dosage: For full therapeutic effect—Rx full therapeutic dosage. The recommended initial daily dosages, *given in divided doses,* until diarrhea is controlled, are:

Children:

3 to 6 months—3 mg. (½ tsp.* t.i.d.)
6 to 12 months—4 mg. (½ tsp. q.i.d.)
1 to 2 years—5 mg. (½ tsp. 5 times daily)
2 to 5 years—6 mg. (1 tsp. t.i.d.)
5 to 8 years—8 mg. (1 tsp. q.i.d.)
8 to 12 years—10 mg. (1 tsp. 5 times daily)

Adults:

20 mg. (2 tsp. 5 times daily or
2 tablets 4 times daily)

**Based on 4 cc. per teaspoonful.*

Maintenance dosage may be as low as one fourth the therapeutic dose.

Lomotil is a brand of diphenoxylate hydrochloride with atropine sulfate; the subtherapeutic amount of atropine is added to discourage deliberate overdosage.

SEARLE *Research in the Service of Medicine*

Chronic Mycotic Granuloma Due To A Dematiaceous Fungus

E. Tremain Bradley, M.D., Roy N. Barnett, M.D., and Leanor D. Haley, Ph.D.

Case Report

This 77-year-old married, right-handed, white meatcutter was first seen on October 8, 1963. About six months earlier he had first noted a mass on the volar aspect of his right hand overlying the fifth metacarpophalangeal joint. In the past month it had doubled in size but produced almost no symptoms. It had become quite red after vigorous palpation the previous day. On examination a fairly discreet, apparently cystic mass, slightly irregular and only slightly tender, presented on the palm of the right hand opposite the little finger from the proximal palmar crease to the base of the finger. It did not seem attached to tendon and a shock was not imparted by percussion. There were no palpable regional nodes and no discoloration on the extremity. Impression at that time was tumor of the right hand, type undetermined. Although the tumor was believed to be benign, prompt excision was advised.

Over the next ten day period while the patient was awaiting admission, the tumor increased two to three times in size and became rather tender. Under aseptic conditions it was aspirated and about 10 cc. of moderately thick, brownish pus was obtained with marked reduction in the size of the mass. Specimens were sent to the Norwalk Hospital Laboratory for culture, for Papanicolau smear, and for examination for uric acid crystals. The only finding was the presence of fungus, first thought to be *Sporotrichum schenkii*. No tumor cells or uric acid crystals were found.

The patient was admitted to the Norwalk Hospital and on November 5, 1963, under general anesthesia the cyst was again aspirated with a No. 13 needle and a small amount of brownish pus was obtained. On immediate examination of the material, the pathologist found what appeared to be the same fungus. In the absence of extensions of disease locally or in the regional lymphatics, and in view of the well defined cystic mass, it seemed wise to proceed with excision at that time. With a tourniquet on the upper arm, an incision was made along the distal palmar crease toward the ulnar side and then curved distally on the ulnar aspect of the hand. A thick-walled, somewhat edematous cyst was shelled out almost entirely by blunt dissection. The nerve running along the ulno-volar aspect of the cyst was carefully dissected away with the sacrifice of only a few fibers. The underlying muscle was exposed and was clean as a section of the cyst was peeled away. One small overlying vessel was divided and ligated. The tourniquet was released and almost no bleeding occurred. The subcutaneous tissues were approximated with No. 00 plain catgut and the skin with No. 4-0 silk sutures. Pressure dressings were applied. No antibiotics were administered.

Admission hemoglobin was 17.4 Gm. with 5.2 M. red blood cells, 7,640 leucocytes of which 64 per cent were adult polymorphonuclear cells, 30 per cent lymphocytes, 5 per cent eosinophils, and 1 per cent monocytes. The urinalysis and determinations of blood urea nitrogen, non-protein nitrogen and fasting blood sugar were within normal limits. The uric acid was 6.1 mg. per cent and gamma globulin 1.3 Gms. per cent. No medication was required or given after surgery.

The wound was dressed on the third post-operative day and was found to be clean and healing with no collection of fluid under the flaps. The patient was discharged home and returned four days later for removal of sutures from a well healed wound. The skin remained rather shiny and there was some induration at the level of the metacarpophalangeal joint on the volar aspect for three weeks but by January 28, 1964, the hand was normal and there was no evidence of recurrence locally or in the regional lymph nodes or elsewhere. On January 30, 1964, the mycologist rendered the final report on identification of the fungus as *Phialophora gougerotii*. On January 12, 1965 there was no evidence of disease and the hand was essentially normal.

Pathologic report was as follows:

Gross: The specimen is a portion of firm pinkish white tissue measuring 2 by 1.8 by 1.5 cm. On section the tissue is rubbery with small abscesses containing yellow purulent material and surrounded by soft pinker zones.

Microscopic: The lesion is a chronic abscess, the outer portion being made up of rather dense fibrous tissue. Toward the center there is necrotic material, many giant cells, plasma cells, lymphocytes and fibroblasts. In this material are many fungal elements which are primarily septate hyphae about 12 micra in length and 6 micra thick which bulge somewhat in the center (Fig. I). Some of the forms are single and ovoid ranging from about 4 to 8 micra in diameter. Many of these organisms are within giant cells. Their tinctorial reactions are relatively striking. In the hematoxylin and eosin they have a light brown color. They stain bright red with the PAS stain and the wall stains an intense black in the Grocott silver stain. They do not take up the acid fast stain and are not particularly

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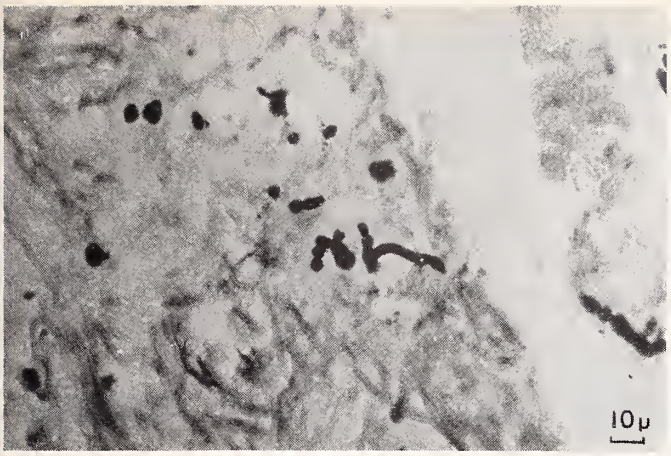

FIGURE I

In this material are many fragments of septate hyphae approximately 12 micra in length and 6 micra in diameter. Some of the cells within the hyphal elements are rounding up giving a moniliform* appearance to the hypha. Grocott Silver Stain.

prominent with the methylene blue counterstain in the acid fast stain. In the Brown Bren bacterial stains the color of the organisms is yellowish brown taking neither the Gram positive nor Gram negative stains.

Diagnosis: Chronic mycotic granuloma.

Mycologic Studies

In wet mounts and Gram stains of the original aspirate numerous brown pigmented small ovoid fungal elements were seen and were mistakenly identified as *Sporotrichum schenkii.* It was soon realized that the pigmentation alone precluded this identification, and it was also noted that Sporotrichum is rarely seen in direct preparation from clinical material. Smears and cultures were then submitted to the Nancy Sayles Day Mycology Laboratory of the Yale-New Haven Medical Center for further study. Results are summarized below.

In the PAS (Periodic acid-Schiff) stain many hyphal elements were seen and took the stain well. Some hyphae were branching. They contained a brownish pigment. No yeast forms were seen. Within ten days there appeared on the Sabouraud's glucose agar plates slow growing shiny black leathery colonies. In lactophenol cotton blue preparations the hyphae were seen to be septate and darkly pigmented. The conidiophores contained many phialides from which small globose conidia were produced; no other type of sporulation was observed. On the basis of the pigmentation of the colonies and the nature of the conidiophores the fungus was identified as a species of Phialophora. Because of the present confusion in the species identification within this genus cultures and sections were sent to Dr. C. W. Emmons* for his opinion. Dr. Emmons identified the organism as typical of Phialophora gougerotii.

Discussion

Infections due to dematiaceous fungi (those having dark pigmented hyphae or spores (or both)) may be classified into three varieties.[1,2]

1. *Chromoblastomycosis:* A chronic skin infection producing verrucous to cauliflower ulcerated and crusted lesions. Several species of Phialophora and at least one species of Cladosporium are recognized etiologic agents for the disease. Regardless of which mycotic agent is responsible for the lesion, the tissue form of the fungus is the same. Rarely one may find hyphal elements in the superficial epithelial crusts; these are brown and septate. Within the dermis, however, will be seen only the round, thick walled, brown bodies, often with one or two septa. These mycotic elements are often in aggregations, lying within the purulent material of the abscess. Usually occurs in tropics although the first case report was from New England.[3]

2. *Mycetoma:* (often called Madura foot). A localized swollen lesion, usually of a foot or hand, involving skin, subcutaneous tissue, fascia and bone. Sinus tracts formed. Contains granulomata and abscesses. In the pus are granules made up of fungal elements. Pathologically there is a central zone of suppuration containing the granule and a surrounding chronic inflammatory reaction which may include epithelioid and giant cells.

3. *Chronic mycotic granuloma:* Chronic granulomatous inflammation due to fungi. Hyphae and spores may be present within giant cells. No true granules and no true suppuration.

Our case definitely falls in the third category. Differentiation from true mycetoma is important because true mycetoma is a progressive destructive disease requiring systemic antibiotic therapy and often leading to amputation. On the other hand chronic granulomas may be sharply circumscribed and may be enucleated with cure. Examples of this are Cladosporiosis of the brain.[4,5,6]

The other problem worthy of comment is that of prompt identification of the organism in the exudate and tissue. Thick-walled round fungus bodies from 3 to 14 micra in diameter appearing brown in unstained or H & E stained material should be identified presumptively as dematiaceous fungi of the genera Phialophora or Cladosporium.

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* Swellings at regular intervals like a chain of beads. We are indebted to W. R. Adams, M.D. for the microphotograph.

* Dr. Emmons is Chief, Mycology Section, Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Disease, Department of Health, Education and Welfare, Bethesda, Maryland.

As illustrated in this report when the round yeast-like cells break free from the moniliform hyphae they can be mistaken for cells of *Sporotrichum schenkii* if the brown color is ignored. Further confusion is possible when the organisms are cultured, for the early colony growth of *Phialophora gougerotii* grossly resembles that of a darkly pigmented strain of Sporotrichum. However when the cultured organisms are examined microscopically the hyphae of Sporotrichum are free of dark pigment and their conidia are produced very differently from those of Phialophora. Inasmuch as Sporotrichosis is treated by iodides rather than by surgery the distinction from dematiaceous fungi is crucial in planning therapy.

Summary

A case of localized mycotic granuloma of the hand due to a dematiaceous fungus is described. The mode of origin of the lesion is not known but it was acquired in Connecticut. The organism was presumptively identified as *Phialophora gougerotii.* Surgical excision effected a cure.

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General Practice: A Search For Identity

The new order which will be ushered in when the tide of events has brought generalism out of the slough is suggested by the promising and dynamic concept of the *new* general practice as the response of the well-trained physician to the demands of his community. The pertinent characteristics of the community —economic, geographic, demographic, medical and so on—are seen to impose certain requirements on any physician who accepts the challenge of providing comprehensive medical care for its families. This concept might be termed "external" specialization: the acceptance of a special set of goals set by community need. "Internal" specialization, on the other hand, begins with the ambition of an individual to acquire special skills and knowledge. Eventually, once he has climbed the staircase to specialism, "Lord Moran's ladder," he can seek out a community that needs his particular services. A moment's reflection will indicate that such an orientation as that implied by "external" specialization would confront medical educators, general-practice preceptors and all those who have a contribution to make in the evolution of general practice, with—not a single prototype "general physician"—but a wide spectrum of community physicians whose education, undergraduate and postgraduate, would span two decades. It seems probable that the process of fitting the physician to the community would see the medical candidate accepting sequential roles, each of increasing responsibility and each interspersed by periods of intensive specialized postgraduate training. The finished product in Curwen's words, ". . . must not only be a specialist but he must be seen to be one. His apprenticeship must be as lengthy and as demanding as that of the present-day consultant and at the end of it he must pass an examination at least as difficult as that now required for entering into a 'minor' specialty."—General Practice: A Search for Identity, editorial, *Canad. Med. Assoc. J.* 91: 1126 (Nov. 21) 1964.

Nalidixic Acid (NegGram®) In Prolonged Treatment Of Chronic Urinary Infections

Bernard Lytton, M.B., F.R.C.S. and B. Marvin Harvard, M.D.

Introduction

■ Nalidixic acid, or NegGram,* is a naphthyridine derivative which has been found to be effective against gram negative organisms infecting the urinary tract.[1-4] It appears that the concentration of the drug in the urine is four to five times that in the blood serum.[5] It was thought desirable to determine both the effectiveness and toxicity of this drug when administered for long periods in the control of chronic or recurrent infections of the urinary tract. This paper presents the results of prolonged treatment in eighteen patients.

Method

Twenty patients, most of whom have had longstanding or recurrent urinary tract infections, (Table I) were treated with nalidixic acid for periods of between eight and eighteen weeks. Two of the patients were treated for only two and three weeks because of mild toxic symptoms. In the first case, there were mild but persistent visual disturbances in the form of flashes of light which ceased when the drug was discontinued. The second patient experienced nausea and palpitations and these disappeared when the drug was discontinued. There were no toxic symptoms in any of the other patients including seven children whose ages varied from three to fourteen years. The adult patients were given an initial dose of one gram four times a day for the first two weeks and was followed by half a gram four times a day for the remaining period of treatment. The children were given half a gram four times a day for the first two weeks and this was reduced to .25 grams four times a day after this.

Table I
Infecting Organisms and Results of Treatment with Nalidixic Acid

INFECTING ORGANISM	CONTROL OF INFECTION	FAILURE TO CONTROL INFECTION	TOTAL
E. Coli	11	2	13
B. Proteus	2	0	2
Paracolon bacillus	1	2	3
Pseudomonas	1	0	1
Klebsiella	1	0	1
	—	—	—
	16	4	20

Urine cultures were obtained prior to the initiation of treatment and only those patients whose organisms were sensitive to the drug in vitro were included in the study. Further cultures were obtained at monthly intervals, at the termination of the treatment, and six weeks after completion of treatment.

Hematocrit, white blood count, and differential counts were performed on each patient at the onset of treatment and at monthly intervals thereafter.

Liver function tests prior to onset of treatment and after completion of treatment were performed on three adults and four children.

Results

The types of infecting organisms, all of which originally exhibited in vitro sensitivity to nalidixic acid, are shown in Table I. It may be seen that the infection was not controlled in two cases of 13 who had *E. coli* infections and two of three patients infected with paracolon bacillus (Table II). Only one

Table II
Sites of Infection and Results of Treatment with Nalidixic Acid

SITE OF INFECTION	TREATMENT SUCCEEDED	TREATMENT FAILED
Bladder—neurogenic dysfunction	4	1
cystitis, no predisposing cause	5	0
Post-Operative—transurethral resection	2	0
Kidney and ureters	2	2
Recurrent urinary infections in Children with bladder neck obstruction	7	1
	—	—
Total	20	4

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* NegGram is a product of Winthrop Laboratories, New York, New York.

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child, a fourteen-year-old girl, developed a resistant organism after several weeks of treatment. This patient has had persistent infections for the past seven years with a residual urine of 40 to 50 cc due to an indeterminate type of bladder dysfunction which has been very resistant to all forms of treatment.

Twelve of the 16 patients in whom the infection was controlled during the administration of the drug had sterile urine cultures six weeks after the administration of the drug was discontinued. The remaining four developed recurrent infections due to persistent urinary tract disease. Many of these patients have had several courses of other antibacterial agents which have failed to control their infection. Four patients had a mild transient eosinophilia during treatment. No other abnormalities were dected in the blood counts carried out during and after treatment. The liver function tests in seven patients showed no change after treatment with nalidixic acid.

Discussion

Nalidixic acid provides us with a further useful antibacterial agent in the treatment of urinary tract infections. It appears to have a wide spectrum of activity against gram negative organisms. Toxic manifestations are infrequent and of a mild nature. It is well tolerated when administered over prolonged periods and provides good control of infection when the organisms are susceptible. The drug has since been administered to five other children with recurrent urinary tract infections and bladder outlet obstruction over a prolonged period of 12 to 16 weeks with no evidence of toxicity and with control of their infections. These cases had proved resistant to sulfanomides before treatment with nalidixic acid was instituted.

Nalidixic acid has the advantage of being of value when the organisms are insensitive or develop resistance to sulfonamide therapy. The same may be said of other antibiotic and antibacterial agents except that there appear to date to be fewer toxic reactions to nalidixic acid than to many of these other agents.

Summary

The results of longterm treatment with nalidixic acid in 18 patients including seven children are presented.

In this study nalidixic acid was an effective, antibacterial agent against a broad spectrum of gram negative organisms; it provides a useful alternative in the treatment of patients who have or develop organisms resistant to other antibacterial agents.

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Humility

Perfection is at a great distance from every mortal being. The experience of any individual is greatly defective, and a large proportion of what we fancy we know must be taken on trust from others of every age and country.—Preface. *Collections from the Unpublished Medical Writings of the Late Caleb Hillier Parry,* M.D.F.R.S. Vol. I., London, Underwoods, Fleet-Street, 1825, p. 3.

A Case Of Post-Partum Heart Disease

Allen Chetrick, M.D.

■ Congestive heart failure of obscure etiology presents to the clinician a stimulating and challenging diagnostic problem. The initial appearance of heart disease during the puerperal state should suggest an entity to which reference in standard medical and cardiology texts is conspicuously absent, namely, post-partum heart disease. The terms post-partal heart disease, "toxic" post-partal heart disease, idiopathic myocardial degeneration associated with pregnancy and puerperium, post-partal heart failure, post-partum myocardiosis and post-partum myocarditis have all been used to describe cardiac failure in the late months of pregnancy and particularly in the puerperium. Virchow[1] as early as 1870 may have first recognized this condition as an idiopathic myocardial degeneration associated with pregnancy. In this country in 1937 two reports by Hull and Hafkesbring[2] and Gouley, McMillan and Bellet[3] first described the clinical features and the diagnostic criteria of post-partum heart disease. The pathogenesis of this disorder remains unknown. Indeed the specificity of the syndrome of post-partum heart disease and its underlying myocardial degenerative process is unproved. Yet the retention of the term remains useful to describe heart failure which appears de novo in late pregnancy or the early puerperium when evidence of heart disease of another etiology is not found.

It is hoped that the following case report will call to your attention the syndrome of post-partum heart disease.

Case Report

A 33-year-old Negro housewife was hospitalized at the Grace New Haven Hospital on November 2, 1961 because of shortness of breath and swelling of the feet of three weeks duration. There had been no history of heart disease previously. In 1954 during her second pregnancy there was a question of toxemia. Her blood pressure at delivery was 118/88. Two months prior to admission she was delivered of her third child. This pregnancy was complicated by an episode of cystitis in the first trimester and at parturition her blood pressure was 150/104. Also at the time of this delivery there were musical rales throughout her lungs on auscultation. A chest x-ray had revealed an infiltrate in the periphery of the left lower lung and interstitial densities throughout the lungs especially parabronchially. The cardiac silhouette was not enlarged on this occasion. "Bronchospasm" was diagnosed and a cough preparation was the only medication given. Six weeks prior to admission steroids were prescribed by an allergist because of "asthma." Three weeks prior to admission dyspnea increased and an awareness of a rapid heart beat and swelling of the feet were first noted. A thiazide was then instituted with very little improvement.

Physical examination revealed a thin, Negro female of fair development in obvious respiratory distress with tachypnea and duskiness of the mucous membranes. The blood pressure was 120/90, pulse 140 and regular, and the temperature 100° F. The retinal veins were engorged. The cervical veins were distended and filled from below. A positive hepato-jugular reflux was present. The breath sounds were decreased over the right lower lung field and there was dullness to percussion over the lower third of the right lung posteriorly. Faint rales were heard over both lung bases. The apical impulse was felt two centimeters beyond the midclavicular line in the 5th intercostal space. There was a gallop rhythm. No murmurs were heard. The liver percussed three fingersbreadth below the right costal margin. There was shifting dullness on percussion of the abdomen and a suggestion of a fluid wave. The sacral area revealed ++ pitting edema and there was ++++ pretibial and ankle edema. No evidence of peripheral thrombophlebitis was found and pelvic examination was normal.

The white-cell count was 5,250. The hematocrit was 43 per cent. The urine gave a + test for protein and a small number of red and white cells were present in the sediment. The blood urea nitrogen, fasting blood sugar and serum electrolytes were all normal. Also normal were liver-function studies, serum protein electrophoresis, three L.E.-cell tests and an antistreptolysin-0 titer. A C-reactive protein was 1 mm. and a VDRL was negative. The protein-bound iodine was 3.1 and 4.2 microgm. on two occasions. A thyroid radioiodine uptake was 17.9 per cent after twenty-four hours.

An electrocardiogram revealed a right axis deviation and sinus tachycardia with non-specific T wave changes. The admission chest x-ray revealed a right pleural effusion and moderate cardiac enlargement. The venous pressure was 70 mm. of water, a decholin circulation time was 25 seconds. An intermediate strength P.P.D. was positive, but three twenty-four hour sputum specimens examined by smear and culture for the tubercle bacillus were negative. Seven blood cultures which were taken during the first five days of hospitalization were negative. A urine culture revealed no growth.

Treatment consisted of a right thoracentesis which yielded 150 cc. of straw-colored fluid with a specific gravity of 1.009 and a protein content of 1.35 gm. per cent, both consistent with that of a transudate. Bacterial smear and culture of this fluid was negative. Digitalization and mercurial diuretics, a low sodium diet and bed rest were employed. On this regimen there was a 25 pound weight loss with disappearance

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DR. ALLEN CHETRICK, assistant clinical professor of medicine, Yale University School of Medicine; assistant attending in medicine, Grace New Haven Community Hospital, New Haven, Connecticut.

of the pleural effusion, peripheral edema and ascites over a 17-day period. Tachycardia, however, with a pulse rate of 110 to 120 persisted and a low grade temperature elevation was present during most of the hospital stay. A lesser degree of cardiomegaly was still present at the time of discharge from the Grace-New Haven Community Hospital. An additional 33 days of convalescence was, therefore, obtained at Laurel Heights Hospital. There the sodium restricted diet was continued and a daily maintenance dose of 1.25 mg. of digoxin was required. After returning home we examined the patient periodically until July 1963 after which she was lost to follow-up. There was never a recurrence of overt congestive heart failure, yet her pulse rate remained in a range of 96 to 110. The pulse was never irregular. The blood pressure was normal except for one reading of 150/90. No murmurs were ever heard.

Discussion

The numerous diagnoses entertained on initial examination indicated our early dilemma; these included idiopathic myocarditis, viral or tuberculous pericarditis, lupus heart disease, rheumatic fever, thyrotoxic cardiopathy, endocardial fibroelastosis and multiple pulmonary emboli. It was only after the negative results of the above battery of laboratory tests that attention was focused on the possibility of post-partum myocarditis or post-partum heart disease. Consistent with this diagnosis was the development of severe congestive heart failure 3 to 6 weeks after delivery. In fact "bronchospasm" at the time of delivery may have been the first indication of pulmonary congestion of cardiac origin. Fullfilling a second criterion as outlined by Hull[4] for the establishment of this diagnosis was the absence of cardiac symptoms before the beginning of pregnancy. Thirdly there was no history of heart disease before pregnancy and, lastly, no laboratory evidence of heart disease of other etiology. Our patient was Negro and the incidence of this disorder is reported to be higher in this race. For this reason more case reports in this country have emanated from the South. Other typical features of post-partum heart disease which were seen in the case under discussion were the gallop rhythm, the anasarca with pleural effusion and ascites as testimony of the extreme degree of fluid retention, a low pulse pressure and the sinus tachycardia with non-specific T wave changes as seen on the electrocardiogram. Relative refractoriness to treatment which includes digitalis[5] is characteristic of post-partum heart disease as compared to heart failure of a more garden variety etiology. The unusually high daily maintenance dose of 1.25 mg. of digoxin in this case attests to the relative insensitivity of the myocardium to this drug. It was apparent that the prolonged period of bed rest provided more benefit than any drugs. Burch[6] in particular has advocated prolonged bed rest for the intractible heart failure and cardiomegaly in these cases.

It may be argued that the elevated blood pressure at the time of delivery and in the early puerperium indicated an essential hypertensive background to her heart disease. Yet there was no antecedent history of hypertension prior to pregnancy and the blood pressure was modestly elevated on only one occasion after recovery. It is noted that hypertension, particularly diastolic elevation, is seen in 33 to 50 per cent[4] of the cases of post-partum heart disease which have been reported. That hypertension may be an important factor pathogenetically is not refuted by most authors, but its exact role is ill defined. Likewise toxemia of pregnancy and nephritis have been listed as possible etiological factors.[7] In the present case no central nervous system aberrations were observed to support an eclamptic state. Also the occurrence of edema in the post-partal state rather than the last trimester of pregnancy is unusual for toxemia. The absence of headache, visual symptoms, anemia and red cell casts in the urine sediment are relative points against nephritis.

Vitamin or nutritional deficiency, endocrine abnormalities, sulfonamide induced "allergic myocarditis", influenza or a specific myocarditis have all received consideration in the literature[8,9] as possible etiological factors. This lack of establishment of a specific etiological agent related to the pregnancy state is responsible for the current controversial status of post-partum heart disease as an entity. Even the pathological picture, best described by Gouley,[3] as a severe myocardial disintegration with widespread and focal inflammatory reaction, often with necrosis and fibrosis, and frequently with mural thromboses is not pathognomonic. A not too dissimilar picture has been noted in Fiedler's myocarditis, beriberi heart disease, the myocardium of chronic alcoholics and the rare myocardium involved by sulfonamide hypersensitivity.

The "ephemeral status of what has been termed post-partal heart disease" has been well editorialized in recent years in two medical journals.[10, 11] It is generally conceded by most authorities that multiple factors may be operating during the vulnerable gravid and early post-partal state. Further investigation is certainly needed to unravel the interrelationship of these forces and pregnancy. In the interim the use of the term post-partum heart disease to describe the occurrence of heart failure of obscure etiology in late pregnancy and early puerperim is probably justifiable.

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TIME OUT . . . *to mark this special day on your calendar*

SEPTEMBER 24, 1965

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of the

Connecticut State Medical Society

and the

YALE UNIVERSITY SCHOOL OF MEDICINE

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It will be a one-day program beginning at 9:30 A.M. and adjourning at 5:00 P.M.

FRIDAY, SEPTEMBER 24, 1965

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* AMA Council on Foods and Nutrition: The Regulation of Dietary Fat, *JAMA* 181:411-423 (August 4, 1962).
AMA Council on Foods and Nutrition: Composition of Certain Margarines, *JAMA* 179:719 (March 3, 1962).

THE PRESIDENT'S PAGE

Utilization — The Physician's Problem

Since the end of World War II, there have been great advances in medical care and a strong desire on the part of all Americans to benefit from this increased knowledge. In taking advantage of improved treatments for many diseases, the public has purchased different forms of hospital and medical insurance to provide for care when illness occurs. Federal, state and local governments have underwritten medical care for those unable to pay their own way. To meet this increased public demand for medical services existing hospitals have expanded, new hospitals and convalescent homes have been built, new research units in medical facilities have been established, more trained personnel have been acquired, new and better drugs have been developed, cobalt and linear acceleration have been added to radiotherapy, atomic medicine is now used in patient care, and, in short, with all these modalities the expense of medical care has risen until it is almost impossible for any present plan of payment to keep abreast of the rising costs. Insurance councils, hospital boards and administrators, and many government plans look to the physician for proper control of this ever increasing burden of expense.

Although hospital management, community standards, prepayment plans and the patient himself enter into hospital cost determination, it is in the utilization of hospital beds that the physician can play an important role in keeping costs at a reasonable level. Since he is the only person who can admit or discharge a patient and who can order the types of diagnostic aids and therapeutic treatments which the patient needs, he alone can keep expenses at a minimum. His decisions determine the needed hospital facilities, the quality of patient care and eventually hospital costs.

The physician should not send a patient into the hospital unless the patient has an illness which can only be treated properly in a modern hospital. Whenever possible, diagnostic procedures should be done on an outside ambulatory basis so as not to use hospital beds for this purpose. Insurance to cover ambulatory diagnostic surveys is long overdue and all of us should encourage insurance carriers to provide this service.

All staff men using hospital facilities should be on the alert to not allow a patient to stay one unnecessary day in the hospital for any non-medical reason whatsoever. This may sound absurd but, from all available information, it is being done constantly and it delays many patients from receiving needed treatment as they await their turn to enter the hospital. It also increases the cost of hospital care to all who carry insurance. Unnecessary diagnostic laboratory and radiological tests should also be guarded against, since they contribute nothing to the care of the patient and add to the cost by prolonging hospital stay and require unnecessary laboratory personnel and equipment.

All good hospitals today have utilization committees which investigate unnecessary admissions, excessive lengths of patient stay, delays in consultation and referral, and delays in use or overuse of all laboratory facilities. *However, it is my firm conviction that the physician himself, who is in charge of his patients' workup and care, is the only one who can truly prevent overutilization and excessive medical care costs.* And, I am convinced that, as each of us realize what our responsibility is in this matter of balancing costs with good care so that each patient gets what he needs when he needs it, in order to keep facilities available for all, the physician will perform in the manner expected of the medical profession.

James R. Cullen, M.D.

Keranil ointment for psoriasis

"a substitute for chrysarobin"

A frequent question at medical meetings is, "What is new for psoriasis?". This advertisement brings you a new product for this disease. It is Keranil ointment and has as its active ingredient chloranil, known also as tetrachloro p-benzoquinone.

Teichmann and Horvath studying polyoxyethylene formulations of chloranil made the following observations:

SUMMARY OF CLINICAL RESULTS WITH CHLORANIL

Concentration	*Total Number of Cases*	*Much Improved***	*Improved**	*Unimproved*	*Aggravated*
10%	63	39	14	6	4
5%	30	16	10	4	0

*** Denotes resolution of at least 50%.*
** Denotes resolution up to 50%.*

DURATION OF TREATMENT

Number of Cases	14	24	18	14	9	3	7	4
Duration (weeks and months)	2 wks.	1 mo.	2 mos.	3 mos.	4 mos.	5 mos.	6 mos.	8 mos.

The types of psoriasis included (parentheses indicate number of cases); Generalized (31), Palms and soles (7), Legs and feet (18), Scalp and ears (27), Groin (3), Neck (5) and Vulva (2).

Keranil Ointment appears to be most effective against the typical psoriatic plaque characterized by heavy scales. Furthermore, it appears to benefit both palmar and plantar plaques as well as intertriginous lesions and to be least effective against the small guttate lesions.

Precautions: Irritations are manifest as a suppurative follicular involvement accompanied by an erythema and as a lymph adenopathy in the drainage area of the inflammation. These irritations subside on withdrawal of the drug. Sensitization has been encountered. Keranil ointment is discoloring to skin and to clothing.

Availability: Keranil ointment is available in one ounce jars as a 10% concentration of choranil in a polyoxyethyene carrier.

References:
Teichmann, W. O. and Horvath, P. N.: Southern Medical Journal *50,* 1521 (1957).

Literature and samples on request.

Salem Pharmacal

Naugatuck, Connecticut

SUMMARY OF PROCEEDINGS
HOUSE OF DELEGATES — ANNUAL MEETING
Hartford, Connecticut — April 27, 1965

REPORT OF THE SECRETARY

Mr. Speaker, Officers of the State Society, Delegates and Guests:

The Membership Report, which is one of the few duties still assigned to the office of the Secretary of your Society, appears in the handbook of this meeting and were it not for the fact that I am leaving the activities of the Society after seven years on the Council, I would not bore you with this presentation on matters which perhaps are not the duties of any particular officer but would seem to be the duty of the Secretary as much as anyone else.

In spite of monthly meetings of the Council which cover five to seven hours of discussion on matters of current concern to the Society, little time is devoted to the consideration of the long-time problems of medical organization and it is to matters of medical organization and finances that I wish to address myself at this time.

Anyone who is interested in the welfare of the medical profession can hardly be satisfied with our functioning, either on the national or the state level. The functioning on the national level is beyond our consideration at this time but it should be the duty of the House of Delegates of the Connecticut State Medical Society to take cognizance of the fact that in many matters of importance to the members of the State Society, our organization is not as adequate for the protection of the interests of its' members as are other organizations of workers. While this is understandable in view of the objectives of our society—the education of its' members, the promotion of Public Health and the protection of the public—the aggressive attitude of nearly all worker organizations to extract the greatest benefits from the public for their members requires that our organization also be assiduous in protecting the welfare of our members.

As background for what I wish to say, it seems desirable that we recall to mind certain changes in our organizational set-up which occurred in 1958-59. Prior to 1958 the chief functionary of the State Office was the Executive Secretary. In the Society re-organization at that time it was decided to change the title of that office to General Manager. In the political manouvering at that time the House of Delegates voted to deny the General Manager the position of Secretary which left him without any official status in the Society and without a vote in the Council. Without entering into the wisdom of reducing the General Manager to the status of an employee, I feel that the move definitely was a detriment to the welfare of the State Society. On the other hand, the elected Secretary of the State Society is an official of the Society without any duties except for membership in the Council. I believe it would be in the best interests of the State Society to give the General Manager official status.

In my further remarks, I will limit myself to (1) Organization, (2) Finances. Deficiencies in organization were factors in ineffectiveness in recent medical affairs such as the fight against government invasion of medical care and in the disunity of the State Medical Society. The success of the Government in invading the medical field will not decrease but rather increase the need for effective organization. The need for a continuing perpetuating body not concerned with the day to day operations of the Society but rather the long-term aspects prompts me to suggest that a committee of the Past-Presidents of the Society be developed to observe the functioning of the Society in an objective way and give their counsel to the Council. It seems like a regrettable waste of knowledge and wisdom not to use the help of those men who were so highly regarded that they were elected to the highest State office of the Medical Society.

With the immediate Past-President as Chairman, the committee could be assembled at infrequent intervals to discuss the overall status of the State Society.

Viewing the State Organization in relation to the constituent County Associations—and even the local medical societies which are not an integral part of organized medicine —much could be done to co-ordinate action on medical problems which is not being done at the present time.

To be sure, each County has its' councillors who attend the meetings of the Council, enter into the discussion and report to their respective counties on the Council's actions. At the Council meetings the councillors theoretically represent the thinking of their constituents.

However, the representation does little to co-ordinate county action with the state action. One might argue that the County Associations are independent members of the State Society and under obligation to follow the direction of the State Society in their conduct of their affairs. This is true and it is probably one of the weaknesses of organized medicine. There is no expectation that the State Society would seek to dominate the County Associations but a direct relation between the State Office and the County Organizations could do much to unify the functioning of medical organization throughout the state.

The County Organizations are regarded as the "grass roots" of organized medicine. But are they? It might be true in the small rural county but in the large counties which may have several cities or large town, it is unlikely that there will be a county community of interest. As a matter-of-fact, even in the cities, or large towns, which have two or more hospitals a community of interest probably does not exist and unless your basic organization has a community of interest "grass roots" opinion cannot exist.

It is a recognized fact that in a University Medical Center far from having a community of interest there is more likely to be an attitude of hostility between the town and the gown.

This hostility should not exist and the value of united action was well exemplified at the last session of the General

Assembly when the strong support of the Connecticut State Medical Society and COMPAC made the animal research act a success.

Can you envision a labor union without its' basic unit in every factory in its' area of influence? What interest could the workers in one factory have in support of their confrers in another factory if solidarity was not to their advantage?

Logically, the "grass roots" of medicine should be in the hospital staff and I believe the time is not far distant when to be effective the medical profession will find it necessary to be united in their own interests at that level.

For the present and as far as the State Medical Society is concerned it would seem advisable to have a committee of the County Societies under the chairmanship of the State Society Secretary to discuss matters of interest between the State Society and the component counties. Since the meeting of this committee would be for the discussion of matters of common interest only it would not affect the independent character of the County Association but it certainly would have definite possibilities of greater State Society unity.

As pointed out earlier, the office of Secretary of the State Society has become an empty office or at most an additional Councillor-at-Large. This is one place where the Secretary of the Connecticut State Medical Society could be an active force in welding a tigher State Organization. The State Society is essentially a committee-functioning organization. While in recent years some of the State Society committees have done outstanding work, many of our committees have been of limited effectiveness. This is largely due to lack of information concerning the interests, abilities and effectiveness of our members. Frequently members of committees are nominated either because the County Councillor or the Nominating Committee wants his county represented or because a member expresses a desire to be on a committee for which he has little knowledge or interest.

Improvement in the records of members of the State Society could provide much information about the background of members which would be valuable in the staffing of committees as well as for many other purposes. Here again, would be a fruitful field of endeavor for the secretary.

The second matter about which the members of the House of Delegates must be informed is the increasing financial demands upon the funds of the Society. I am sure that you are all aware that the funds for conducting the affairs of the Connecticut State Medical Society are derived almost wholly from the dues of its' members.

Several developments in the past few years have placed such a heavy burden on the Society that our reserves, which are not large, have been tapped to meet extraordinary charges. Unfortunately, some of these charges are apt to increase in the future and unless some way can be found to control these charges membership dues will have to be increased.

There are four fields in which expenses are increasing;

1. Legal Fees
2. Deficit in publication of Connecticut Medicine
3. Representation of A.M.A. Committee Meetings
4. Public Relations Re-organization

Legal Fees

The legal aspects of many matters coming before the Council and committees of the State Society require advice and sometimes legal action. The cost of such service can be high. I know you are aware of the high costs for legal action in connection with the court action between the State Society and Connecticut Medical Services, Inc.

Other matters under consideration in the Council could lead to court action and even without court action much legal advice is necessary. The future is certain to see even more need for legal assistance and the cost could be a substantial amount each year.

Connecticut Medicine

Connecticut Medicine the official publication of the Connecticut State Medical Society was supported for many years by the advertising revenue. In recent years, due to events over which the society and the officers of Connecticut Medicine have no control, the advertising revenue has decreased greatly and while costs of publication have decreased with decrease in size of issues, the gap between the advertising revenue and the costs of publication has widened so much that the deficit is approaching $20,000.00 which must be met out of dues revenue. In addition, the Internal Revenue has indicated that advertising revenue is taxable which can further widen the gap between income and outgo.

A consideration of the factors responsible for the present situation would indicate that there is little chance that the trend can be reversed.

The most important factor is the rise of the free, nationally distributed medical publications such as *"Medical Economics"* and *"Modern Medicine"*. A study of the issues of the above publications shows that ⅔ of the pages of those publications are advertising while Connecticut Medicine has only about ⅓ of pages of advertising.

Advertisers are expected to buy space in journals of national distribution with circulation figures in hundreds of thousands rather than in state journals such as Connecticut Medicine with a circulation of about 3,700.

A.M.A. Meetings

In the past few years the A.M.A. has called numerous meetings on a variety of subjects at which state societies were urged to have representation. Since most of these meetings are held in the middle west the cost of attending these meetings can be several hundred dollars and over a year the aggregate cost can be several thousand dollars. Since these meetings are not planned long in advance the appropriation is outside the budget.

Public Relations

As a part of the study of the State Office by an Ad Hoc Committee of the Council over the past two years, it has become obvious that a more effective public relations program is a vital necessity for the Connecticut State Medical Society. While the final determination of a new program has not been made, it is realized that an effective program can be had only at an increased cost.

I have mentioned these four items in order that you may know what is in the financial future of the Connecticut State Medical Society and for which an increase in dues will probably be necessary.

I believe that it should be the policy of the society that any reduction in the reserves of the society should be made up by an assessment the following year.

In closing, I wish to express my thanks to the House of Delegates for the privilege of working in the State Society during the past seven years. I regret that my physical condition will not permit me to continue in an active capacity but I will be ready always to serve in any capacity within my physical limitations.

Respectfully submitted,
Denis S. O'Connor, *Secretary*

PLACEMENT OPPORTUNITIES

MIDDLETOWN, CONN. is seeking physicians to fulfill community needs. Gen'l. Pract., Pediat., Orthoped., E.N.T., Ophth., Neurosurg., and Neurol. are needed to establish private or partnership practice—qualified men will receive appointments in fully accredited 255 bed general hospital. For details, write: President, Medical Staff, Middlesex Memorial Hospital, Middletown, Conn.

INTERNIST—Rare opportunity for young man. Internist in Stamford, Conn. desires to share his well-equipped office with compatible colleague. Especially suited for hematologist or psychiatrist. Available October 1.

G.P.—wishes partner for growing town in Eastern Connecticut to help with patient load, share well-equipped office.

G.P. & PEDIATRICIAN—needed in town in Northern Connecticut. Excellent location close to several hospitals, near Mass.-Conn. border.

OPHTHALMOLOGIST, PEDIATRICIAN, RADIOLOGIST—Opportunity for Board eligible or Board certified ophthalmologist, pediatrician and radiologist to join a group of physicians being formed for a new building to be completed by July 1965. Large University hospital and one other hospital close by.

PEDIATRICIAN AND ORTHOPEDIST—Board Eligible or Certified Pediatrician and Orthopedist needed in Winsted, Connecticut area. This area is served by a small, accredited hospital and provides an excellent opportunity for practice.

STAFF PHYSICIAN—Internist or generalist to join medical group in fully accredited, comprehensive medical rehabilitation inpatient facility adjacent to large university medical center. Inquiries invited from young men completing residency or military service in 1964 and 1965. Address: Director, Gaylord Hospital, Box 400, Wallingford, Conn.

ANYONE INTERESTED IN THE ABOVE IS ASKED TO COMMUNICATE WITH THE GENERAL MANAGER'S OFFICE, 160 ST. RONAN STREET, NEW HAVEN.

PLACEMENT WANTED

ANESTHESIOLOGIST — Board Certified, 34 years of age, military obligations completed, would like to establish practice with either partner or group. Will also set up a solo practice, if area requires. Connecticut license.

INTERNIST—wishes group practice or partnership. University trained, presently in practice, would like to locate near medical center. 36 years of age, military obligation completed.

INTERNIST—32 years of age, university trained, completing military duty as of July, 1965, would like partnership or group practice in large city. Board eligible, good hospital training background.

OBS.-GYN.—Board eligible, 34 years of age, seeks partnership or group practice in Southern Connecticut.

OBS.-GYN.—36 years old, completing 4 year university residency, July, 1965, military obligation completed, seeks partnership or group practice.

OBS.-GYN.—36 years of age, Board Certified, wishes to locate in Connecticut in either solo or partnership practice. Presently completing military obligations and will be available shortly.

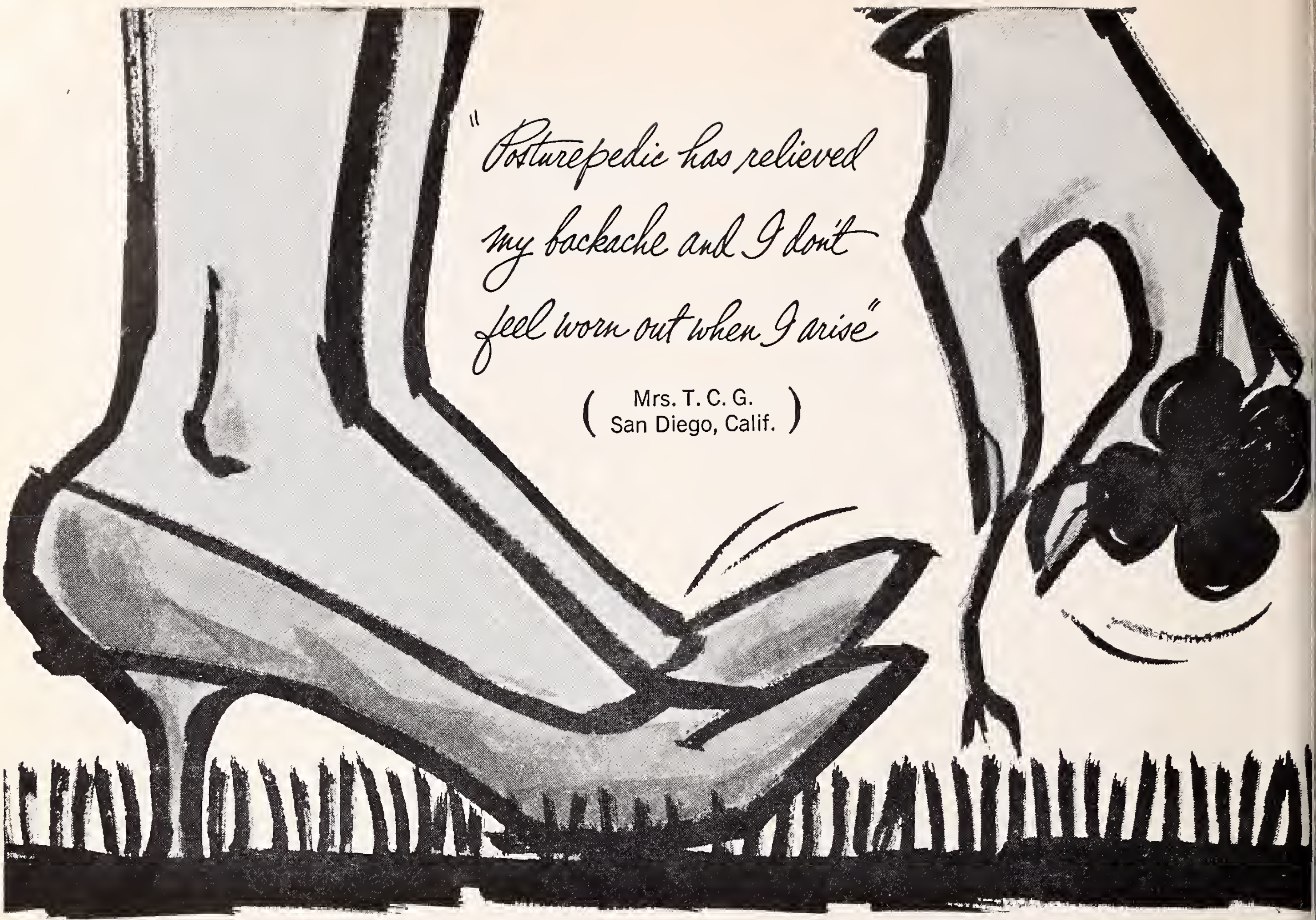
G.P.—Young G.P. with 6 years solo practice plus other experience would like to associate with small group or a partner in suburban community about July 1.

G.P.—Connecticut license, 43 years of age, available June 30, 1965. Would like to practice in small group or with partner.

PHYSICIAN trained in Physical Medicine and Rehabilitation, Board eligible, Connecticut licence, wishes to practice with either a partner or in an institution.

OBS.-GYN.—33 years of age, Board eligible, Connecticut license, wishes to practice with either a partner or as an assistant to a Connecticut Obs.-Gyn. specialist.

SET THE EXAMPLE –
USE SEAT BELTS!


"Posturepedic has relieved my backache and I don't feel worn out when I arise"
(Mrs. T. C. G. San Diego, Calif.)

When the otherwise normal, healthy patient complains of discomfort and backaches, many doctors suggest a

Sealy Posturepedic® mattress

If you find backache brought on by poor sleeping posture, consider the experience many, many doctors and patients have had with Sealy Posturepedic. In countless cases, they have found Posturepedic truly helps because it provides essential firm support.

Sealy Posturepedic is designed in cooperation with leading orthopedic surgeons for good sleeping posture. Its firmness, providing the kind of support acknowledged most beneficial, helps keep the spine in line and tends to reduce muscle tension.

NOW! SPECIAL PROFESSIONAL DISCOUNT ON POSTUREPEDIC

As a doctor, you are invited to take advantage of a professional discount on the Sealy Posturepedic.
We believe your personal use will convince you of the Posturepedic's distinctive benefits and, we would hope, merit your valued recommendation.
The professional discount represents a saving of $39 per set over the regular retail price for mattress and foundation. Limited to one full or two twin size sets. To place your order, mail this coupon, to Sealy Mattress Company, Oakville, Conn.

☐ Enclosed is my check. Please send the Sealy Posturepedic set(s) indicated below. (To be delivered by my nearest Sealy dealer.)

☐ 1 Full Size
☐ 1 Twin Size
☐ 2 Twin Size

Check your preference:
☐ Innerspring Set
☐ Foam Rubber Set

☐ Please send me additional information about professional discounts on Sealy Posturepedic mattresses.

Retail	**Professional**
Posturepedic innerspring mattress and foundation $159.00 per set (add state tax)	$120.00
Posturepedic in Foam Rubber $159.00 per set (add state tax)	$120.00

Dr.__________________________________

Residence______________________________

City______________Zone_____State________

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WOMAN'S AUXILIARY

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Mrs. William R. Richards, Hamden

President-Elect
Mrs. John D. O'Connell, West Hartford
First Vice-President
Mrs. James F. Jones, Danielson
Second Vice-President
Mrs. Ralph T. Tella, Stamford

Recording Secretary
Mrs. Nicholas Creaturo, Trumbull
Corresponding Secretary
Mrs. Anthony Cipriano, Hamden
Treasurer
Mrs. Stephen A. Hulme, West Hartford

Mrs. William R. Richards

Mrs. William R. Richards of Hamden was installed as the twenty-second president of the Auxiliary at the annual meeting in Hartford. Frederike is a native of Budapest, Hungary, who came to New York City at the age of six and was a resident there until her marriage to Dr. Richards. She is a graduate of Cornell University with majors both in mathematics and German. Graduate work in the New York School of Social Work and at Southern Connecticut State College, working as an engineering assistant for the American Telephone and Telegraph Co., and teaching, have all been included in her experiences as well as her many volunteer and civic enterprises.

Mrs. Richards is a member of the Westville Garden Club, the West End Women's Club, of which she is Legislative Chairman, Home Service Chairman of the Disaster Committee of the New Haven Red Cross, and the Lutheran Women's Group. She has contributed many years of service to the Auxiliary both on the State level and in her own county, New Haven, of which she was president for two years.

Frederike and Dr. Richards, General Manager of the Connecticut State Medical Society have three sons. The oldest son, Bill, served in the army for two years and is now back at Columbia University majoring in statistical mathematics; Douglas, also an army veteran, is now married and has a one-year-old son; James is in high school.

Board Of Directors 1965-1966

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Publicity—Mrs. Mehdi Eslami, 100 York Street, New Haven—776-6802

Rural Health—Mrs. Norman H. Gardner, 22 Summit Street, East Hampton—AN 7-2745

Safety—Mrs. Joseph Bruno, 1266 Forest Road, New Haven—387-5589

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Medicine, Education Commend Health Education Projects

Two television and movie organizations and one foundation have been commended for their work in health education by the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association.

Walt Disney Studios were commended "for their keen insight in considering the significance of developing health education films for the junior high schools of the United States." The Joint Committee offered its cooperation and support to this project.

The Samuel Bronfman Foundation was commended for sponsoring National School Health Education Study, and was encouraged to continue support for research in health education.

The National Broadcasing Company was commended for its production of the program, "Mr. Novak," and was encouraged to continue the series. The Committee also urged that additional programs be concerned with health problems, such as venereal disease, unwed parents and the use of harmful substances.

Referring to "Mr. Novak," the Joint Committee said it recognizes the value such programs have for health and education.

The commendations were made at a meeting this spring of the Joint Committee on Health Problems in Education. The Committee has been a cooperative effort of education and medicine for the past 54 years.

What Is A Clinical Investigator?

In recent years, several medical schools have established centers for training clinical pharmacologists, and the Pharmaceutical Manufacturers Association and some of the leading pharmaceutical companies have made substantial grants for the support of such training programs. It is harder to define a clinical investigator, but I believe that most people would agree that a clinical investigator is a physician who has had some residency training in one of the clinical specialties, has some knowledge beyond the undergraduate curriculum of one or more of the basic sciences, and who seeks in his research to explain human disease with the help of those basic sciences. Harry F. Dowling, M.D. in *J.A.M.A.*, 187:3 (Jan. 18) 1964.

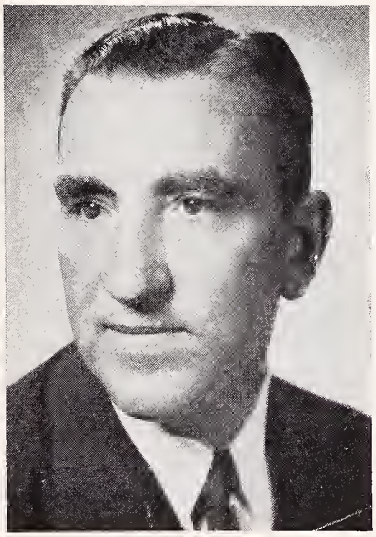
OBITUARIES

Seraphino Paul Tombari, M.D.

1908 - 1965

The death of Seraphino Paul Tombari occurred on May 3, 1965, after an illness of a few months. He was born in Norwich, Connecticut, on June 8, 1908.

After receiving his early education in the Norwich schools, he went on to the University of Connecticut, and from there to Boston University School of Medicine, graduating in 1934. Internship was spent at Hospital of St. Raphael's in New Haven.



After private practice in Norwich for three years, he entered the Army Medical Corps. Following an honorable discharge he spent most of his medical career at the Seaside in Waterford. However, after 19 years of service there, he returned to private practice, feeling that he still had much to offer of himself.

He was married in 1939 to the former Celia Spizak who survives him. He also leaves a daughter, two sons and a grandson.

In his earlier years "Phino," as he was affectionately called by his friends, was active in athletics, especially baseball and football. In later years golf took up much of his athletic talents. He excelled in this sport, also.

To those of us who knew him as a colleague and as a friend, his death leaves a memory of a man who was kind, considerate of others, and unsparing of his time and efforts. To his wife and family, his passing will surely leave a memory of a loving and devoted husband and father.

Casimir E. Bielecki, M.D.

Abraham M. Schaefer, M.D.

1900 - 1965

Dr. Abraham M. Schaefer was born in New Britain, Connecticut, and was a graduate of New Britain High School, Yale Sheffield Scientific School and Yale University of Medicine.

He served his internship at St. Francis Hospital, Hartford, from 1925 through 1926, and was a resident physician in medicine, and assistant in the Department of Pathology at Mt. Sinai Hospital in New York City. Upon finishing his work at Mt. Sinai Hospital in New York, Dr. Schaefer returned to Hartford, where he practiced ever since.

He was a member of the staff of Mt. Sinai Hospital and McCook Memorial Hospital in Hartford. He was on the courtesy staff at St. Francis Hospital and Hartford Hospital.

He was an associate physician for the Connecticut State Veterans Home and Hospital, Rocky Hill, from 1948 to the time of his death. He was also visiting pathologist at Veterans Hospital in Newington, from 1931 to 1940.

During World War I, he served as a member of the Yale Naval Unit.

His societies were, the Hartford Medical Society, Hartford County Medical Society, Connecticut State Medical Society, American Medical Association, American Heart Association, Connecticut and American Societies, American Board of Internists. He was certified by the American Board of Internal Medicine in 1945. He was a member of the Yale Club of Hartford, and a member of Association of Yale Alumni in Medicine.

He was a prolific reader of medical journals and papers, and attended lectures at many medical centers. A well-rounded man, he interested himself in communal matters, and was a member of Temple Beth Israel and its Men's Club.

A devoted father, he leaves his wife, Mrs. Alice Leavitt Schaefer, a son, Attorney Daniel R. Schaefer, presently with the United States Navy, and a daughter, Caroline E., presently with the Library of Congress in Washington, D. C.

The following are among the papers he had written and published:

1. "Some Current Concepts of Coronary Artery Disease." *Connecticut State Medical Journal,* February, 1950.
2. "A Century of Medical Progress—And Now Looking Forward." Hartford Hospital Bulletin, September, 1955.
3. Co-Author with the late Lane B. Kline, M.D. "A Case Report of Primary Adenocarcinoma of the Jejunum." The Military Surgeon, April, 1940.
4. Co-Author with the late William Leichner, M.D. "Synovial Sarcoma." Connecticut State Medical Journal, February, 1941.

He was a gentleman, and most sincere in his treatment of colleagues and patients. A true servant of God, he treated all of his patients as children of God.

EDMUND BEIZER, M.D.

In Memoriam

Akerson, Irving B. — Bridgeport; University of Iowa Medical School, 1925. Dr. Akerson was a pathologist at the Bridgeport Hospital for 25 years. He was an Army veteran of World War I and had served in the Field Artillery. Dr. Akerson was a pathology instructor at Harvard Medical School from 1928 to 1941, and at the Fones Dental School at the University of Bridgeport from 1950 to 1965. Dr. Akerson was a member and past president of the Bridgeport Medical Association and the Connecticut Society of Pathologists. He was also a member of the Fairfield County Medical Association, the Connecticut State Medical Society, the American Medical Association, and the American Society of Clinical Pathologists. Dr. Akerson died May 8, at the age of 70.

Heyman, Joseph—West Hartford; Medical College of Virginia, 1917. Dr. Heyman was a well-known surgeon in the West Hartford area for over 40 years. He served as first lieutenant in the Medical Corps of the U. S. Army in World War I. Dr. Heyman was on the staff of Mt. Sinai Hospital and McCook Memorial Hospital, and served as chief surgeon for 40 years. He was on the courtesy staff of Hartford and St. Francis Hospitals, and was a consulting surgeon at the Institute of Living. Dr. Heyman was a member of the Hartford County Medical Association, the Connecticut State Medical Society, the American Medical Association, and a Fellow of the American College of Surgeons and the International College of Surgeons. Dr. Heyman died May 25, at the age of 71.

Taylor, Clifton C. — Easton; Harvard Medical School, 1916. Dr. Taylor was a prominent physician in Bridgeport for many years. He was an Army veteran of World War I, serving as a captain in the Medical Corps. Dr. Taylor was formerly chief of staff for pediatrics at Bridgeport Hospital and served as child hygienist on the Bridgeport Board of Health. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, the American Medical Association, and the Hezekiah Beardsley Pediatric Society. He was treasurer for the Fairfield County Medical Association for 20 years. Dr. Taylor died May 31, at the age of 73.

van Heuven, J. Alexander — Hamden; Utrecht University School of Medicine (Netherlands), 1922. Dr. van Heuven was a practicing ophthalmologist in New Haven since 1947. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society, the American Medical Association, the International College of Surgery, the American College of Surgery, the American Academy of Ophthalmology and Otolaryngology, the Pan American Association of Ophthalmology and the Ophthalmological Society of the United Kingdom. He was a diplomate of the American Board of Ophthalmology. Dr. van Heuven died May 25, at the age of 67.

AROUND THE STATE

News From Yale University School Of Medicine

Dr. Philip K. Bondy, one of the nation's leading investigators in the field of endocrine and metabolic diseases, has been appointed Ensign Professor of Medicine and Chairman of the Department of Medicine at the Yale School of Medicine, effective October 1, 1965.

A member of the Yale faculty since 1952, Dr. Bondy will succeed Dr. Paul B. Beeson, who has been appointed Nuffield Professor of Clinical Medicine at Oxford University.

Dr. Bondy, who is known for his work on steroid metabolism, has headed the Department of Medicine's section on metabolic diseases since 1955. In 1962 he received a Research Career Award from the United States Public Health Service in recognition of his distinguished research record.

He was chairman of the curriculum committee of the School of Medicine from 1959 to 1963, and of the school's committee for outpatient services from 1960 to 1962. He served as editor-in-chief of the Journal of Clinical Investigation from 1957 to 1962, and is a member of the editorial board of Medicine and of the Yearbook of Medicine.

A native of New York City, he was born December 15, 1917, the son of Eugene L. and Irene Ruth (Kramer) Bondy. He was educated at New Rochelle, New York, High School and at Columbia University, where he earned an A.B. degree in 1938 and received the Edward Sutliffe Brainard Prize. He was awarded the M.D. degree from Harvard University Medical School in 1942.

After his interneship at Peter Bent Brigham Hospital in Boston, he joined the staff of Grady Memorial Hospital in Atlanta, Georgia, in 1943 as an Assistant Resident in Medicine. Three months later he enlisted in the Army Medical Corps as a First Lieutenant. He served at several hospitals in the South for two and one-half years and was discharged with the rank of Captain.

Dr. Bondy returned to Grady Memorial Hospital as Assistant Resident. In 1947 he was promoted to Chief Resident in Medicine and also was named that year as an Assistant in Medicine at Emory University.

He first came to Yale University in 1948 as an Alexander Browne Coxe Fellow in Physiological Chemistry, and as an Instructor in that field. A year later he returned to Emory University as an Associate in Medicine and was promoted to Assistant Professor of Medicine in 1951.

He was appointed to the Yale faculty in 1952 as an Assistant Professor of Medicine, and was promoted to Associate Professor in 1955 and to Professor in 1961.

Dr. Bondy is a Diplomate of the National Board of Medical Examiners, a Fellow of the New York Academy of Sciences, and a member of the American Society for Clinical Investigation, the American Federation for Clinical Research, the Society for Experimental Biology and Medicine, the Endocrine Society, the Laurentian Hormone Conference, and Boyleston Society, and the Association of American Physicians.

He is also a member of Phi Beta Kappa, Sigma Chi and Alpha Omega Alpha honorary fraternities. He received the Sigma Chi Prize at Emory University in 1949 for meritorious research.

Since 1961 he has been a member of the consulting staff in medicine of the Meriden Hospital. In 1960 he became a member of the publication committee of the Endocrine Society, and was elected to the Council of that society in 1964.

Dr. Bondy is married to the former Sarah B. Ernst of Scarsdale, New York. They have three children and live in Woodbridge, Connecticut.

News From Connecticut State Department Of Health

Infectious hepatitis cases affecting Connecticut people have numbered 153 so far this year, less than half the 352 total for the same period in 1964, said Franklin M. Foote, M.D., Commissioner, Connecticut State Department of Health.

Dr. Foote, commenting on the drop in infectious hepatitis cases indicated for the current year, noted that 1964, with its 12 month total of 667 cases had been the year of greatest incidence since 1955, when there were 724 cases. Infectious hepatitis is a serious viral disorder that usually has a protracted effect on the patient. Control measures vary from good personal hygiene, to sewage treatment and the harvesting of shellfish from unpolluted waters.

Some of the other communicable disease cases reported during the week were as follows: measles 174 compared with 172 the week before; German measles 44 against 45; chickenpox 195 against 215; streptococcal sore throat 261 down from 358 the week before; and infectious mononucleosis which jumped to 37 from 16.

Syphilis cases reported in the week came to 16, compared with seven, while gonorrhea reports climbed to 78, up from 33, and established the highest level for this disease since the week ending October 17, 1964, when there were 97 cases reported.

State Requires Fluoridation

Connecticut has become the first state in the nation to require fluoridation of the water supplies of all its major cities.

A bill passed by the legislature and signed May 28 by Gov. John Dempsey requires that water supplies in cities with 50,000 or more population be fluoridated by Jan. 1, 1967. In cities with populations from 20,000-50,00, the water must be fluoridated by Oct. 1, 1967. These provisions will cover a majority of residents in the small, highly urbanized state.

Passage of the bill by the legislature took only one day. It came after the House objected to requiring fluoridation by administrative order of the State Public Health Council, and ordered the House Public Health Committee to bring out its own bill for mandatory fluoridation.

The ensuing legislation passed the House, 136-60. Senate approval took only 10 minutes and was virtually unanimous.

The legislature's action ends a two-year-old dispute which began when the privately-owned New Haven Water Co. successfully challenged ordinances by the city of New Haven and the nearby town of Hamden requiring fluoridation of water supplies.

A decision by Superior Court Judge Frank Covello adjudged the state as the logical authority, and the State Supreme Court upheld this ruling.

Highway Deaths Continue To Increase

In 1962 highway deaths topped the 40,000 mark and in 1964 the number climbed to 48,000 persons. As 1965 gets underway the 50,000 mark is not far away.

Tragedy did not stop with the deaths, but added 3,840,000 persons to the injured list, according to The Travelers Insurance Companies which has completed a survey of statistics from state motor vehicle departments.

Adverse weather was not an important contributing factor. Records show that 90 per cent of the fatal crashes occurred on clear days and on dry roads. The remaining 10 per cent in fog, rain and snowy weather.

Excessive speed continues to hold top place in the list of accident causes, with driving on the wrong side of the road and reckless driving taking second and third places respectively. Pedestrians were at fault in many of the fatal accidents, with crossing between intersections being the chief reason.

Youthful drivers hold the greatest responsibility in the highway death list. They were involved in more than 29 per cent of the fatal accidents while representing about 15 per cent of all licensed drivers in the country. Older drivers, those over 65, were involved in 7.7 per cent of the 1964 fatalities. They represent about 7 per cent of the driving population.

Health Insurance Council

The Health Insurance Council has completed revisions in its uniform forms program designed to ease the paperwork of physicians in reporting claims information on patients covered by insurance company health insurance policies.

Developed by the HIC in cooperation with the American Medical Association, the revised program consists of a master list of questions to obtain information essential for the payment of health insurance benefits. The questions used have been simplified and standardized in terminology and sequence and are applicable to all forms of health insurance, both group and individual. The revisions constitute a refinement of an earlier program in which two lists of questions were used, one for group claims and one for individual and family claims.

Broad support for the new program within the insurance industry came from the HIC's constituent associations representing companies which issue more than 90 per cent of the health care coverages written by the nation's insurance companies. Many companies have adopted the master list and others are planning to convert to the new procedure shortly.

The HIC has published a brief reference manual on the revised uniform forms program to serve as a guide to physicians and their medical assistants when completing claim statements.

Quantities of the booklet have been distributed to state and county medical societies throughout the country, and to medical assistants and clinic managers through their respective local organizations.

Single copies of the booklet, entitled "Simplified and Standardized Health Insurance Claim Forms—a Report to the Physician," may be obtained without charge from the Health Insurance Council, 750 Third Avenue, New York, N.Y. 10017.

MAJOR MEDICAL EXPENSE PLAN

A NEW SPECIAL ENROLLMENT PERIOD ALLOWS YOU TO APPLY FOR AN IMPROVED CONTRACT

Reimbursements up to $10,000.00. Deductible of $500.00, $750.00, or $1,000.00. Protection after retirement, coverage for widows and children in the event of prior demise of member. All dependent children can be covered regardless of age. This same broad coverage is also available for the first time to your employees and their families.

ACCIDENT AND HEALTH PLAN

In addition to the above, members up to age 40 may now purchase their Accident and Health protection at a 25% reduction in cost.

Through its continued official sponsorship of our Group Plans, The Connecticut State Medical Society has once again made it possible to offer broadened coverage under these two time-tested policies to members of the Society. If you are not now enrolled, do not turn your back on old friends who have served Connecticut physicians for over a quarter of a century. If a sufficient number of new applications are submitted for the Major Medical Expense Plan, all policies will be issued regardless of past medical history. For full information write or phone.

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Potassium May Cause Ulcerations

The small-bowel ulcerations suffered by a very small percentage of patients who have taken thiazide drugs may have been caused by the potassium supplement in the pills, suggests a report in the current Journal of the American Medical Association.

There recently has been a "sudden and startling increase" in the incidence of these ulcerations, the report notes.

The article stresses, however, "there is no clinical or experimental evidence indicating the need for any limitation of the use of thiazide diuretics alone."

The thiazides, which are given to stimulate urine secretion, do not appear to play any part in the production of the ulcers, said the report by six physicians at the Jewish Hospital, Brooklyn, N. Y.

Instead, the fault may lie with the potassium chloride sometimes included in thiazide pills to help replace potassium lost in heavy urine flow.

This potassium cloride is released in the intestinal tract when a coating surrounding it dissolves. The ideal coating, the report noted, is one which maintains the tablet until it reaches the small intestine, and then permits rapid release of the drug.

"Ironically, the more nearly a particular coating approaches this goal, the more apt it is to result in ulceration," the report said.

The article reported research in which tablets of thiazide, potassium and tablet coatings were implanted in dogs' intestines.

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For Change of Address

must reach us at least three weeks before the date of issue with which it is to take effect. Please be sure to send us the old address, together with the new address.

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Doctor's Office

Arnold J. Benton, M.D., announces the opening of an office for the practice of psychiatry at 46 Main Street, New Canaan.

Suk Choo Chang, M.D., announces the opening of an office for the practice of psychiatry at 210 Prospect Street, New Haven.

Edward J. Day, M.D., announces the removal of his office to 609 Savin Avenue, West Haven.

Benjamin J. Feola, M.D., announces the opening of an office for the practice of obstetrics and gynecology at 117 South Main Street, Branford.

Edward A. Kamens, M.D., has announced the association with Lester P. Eidelhoch, M.D., in the practice of general surgery at 881 Lafayette Street, Bridgeport.

BOOKS RECEIVED

Books received for review are acknowledged in this department and such acknowledgement must be regarded as a sufficient return for the courtesy of the sender. Selection will be made for review in the interests of our readers and as space permits.

Fracture Problems. Problem Cases from Fracture Grand Rounds at the Massachusetts General Hospital, by Harris-Jones-Aufranc, The C. V. Mosby Co., St. Louis, Missouri, 1965. 371 pp. with 19 figures, including 5 in color. $20.00.

Hallux Valgus, Allied Deformities of the Forefoot and Metatarsalgia. By H. Kelikian, M.D., W. B. Saunders Company, Philadelphia, June 2, 1965, 503 pp., illustrated. $19.50.

Today's Health Guide. A manual of health information and guidance for the American family. Published by the American Medical Association, Edited by W. W. Bauer, M.D., 624 pp., Illustrated. $5.95.

The Logic Of Faith. An Invitation to Pause and Reflect. By Philipp Schmahl, M.D., Philosophical Library, New York, 1965, 111 pp. $3.50.

The Pediatric Patient 1965. By Sarah R. Gustafson, Ph.D., and David Baird Coursin, M.D., J. B. Lippincott Company, Philadelphia, 1965, 216 pp., 81 figures. $6.00.

Sore Throat

Sore throat is nature's warning system that something in your body is out of order.

Often a sore throat accompanies a common cold and the soreness passes in a few days with no further affect. But, says Today's Health, the magazine of the American Medical Association, sore throat also can be the symptom of any of a wide range of diseases, from diphtheria to leukemia, that require your doctor's skill, not your guessing, to diagnose.

Sometimes tonsils and adenoids are involved in causing a sore throat, and when these organs cause trouble they frequently are removed. Tonsil-adenoid removals account for half of all operations performed on children, Today's Health reports. Sometimes the surgery helps prevent sore throat, sometimes it doesn't.

Allergies can cause sore throats. Cold, dry winter air can trigger it. So can extreme thirst, excessive smoking or mouth breathing. Anything that dries out the throat and cuts off secretions that normally wash dust away.

Virus infections of many types also are a cause of sore throat, and everyone who has had "flu" knows that this particular virus disease often causes the throat to hurt.

"Strep throat" is a serious infection that occasionally leads to rheumatic fever and possible heart damage. It can be knocked out with penicillin, if it is diagnosed in time.

The crucial diagnostic test in sore throats is the swab test in which the germs causing the trouble can then be identified.

There is little or nothing you can do to cure a sore throat at home, says Today's Health. There are medications which bring temporary easing of the discomfort but the cure must be launched by your physician. The best money you can spend if you get a sore throat is the dime it takes to call your doctor.

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For full details, see the complete prescribing information.

*Dorhout Mees, E.J., and Geyskes, G.G.: Acta med. scandinav. 175:703, 1964.

Photos: A 59-year-old woman with hypertensive cardiovascular disease and edema resistant to low-salt diet and bed rest. The patient lost 8½ lbs. in one week with a single tablet daily of Hygroton, brand of chlorthalidone.

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1965 MEETINGS

September 24—40th Clinical Congress to be held in Mary S. Harkness Auditorium at the Yale University School of Medicine, New Haven. The program will be devoted to "Advances in the Treatment of Infection" and "Advances in the Treatment of Shock".

October 10—The annual scientific meeting of the American College of Nutrition will be held at the Americana Hotel in New York City on Sunday, October 10, 1965, at 10 a.m. For further information, please contact Robert A. Peterman, M.D., F.A.C.N., Secretary, 3 Craig Court, Totowa Borough, New Jersey 07512.

October 28 – 182nd Semi-Annual Meeting of The New Haven County Medical Association will be held at the Waverly Inn, Cheshire, Connecticut. The Business Meeting is tentatively scheduled for 3:30 P.M. Further details will be furnished as soon as arrangements are completed.

December 8—Connecticut Society of American Board Surgeons Annual Meeting to be held at the Hotel America in Hartford, Connecticut.

Special Notices

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November 28, 1965

The Seventh National Conference on the Medical Aspects of Sports, sponsored by the American Medical Association under the auspices of the AMA Committee on the Medical Aspects of Sports, will be held in Philadelphia, Pennsylvania, at the Benjamin Franklin Hotel on November 28, 1965. The Conference is held annually in conjunction with and on the first day of the Clinical Convention of the American Medical Association. In addition, the Conference will be held in cooperation with the observance of the bicentennial anniversary of the University of Pennsylvania's School of Medicine and of medical education in the United States.

As was true of the previous six Conferences, the Seventh will cover a wide range of subjects of interest to physicians, especially those serving school and college sports programs. Included will be papers, panels, and discussions relating to readiness for sports participation, management of health problems in sports, and application of research to injury prevention.

Those interested in receiving further information concerning the Conference should address the Secretary, Committee on the Medical Aspects of Sports, American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610.

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References: 1. Carpenter, E. B., South. M.J. 51:627, 1958. 2. Crookshank, J. W.: J. Louisiana State Med. Soc. 114:272, 1962. 3. Feinberg, I., et al.: Am. J. Orthoped. 4:280, 1962. 4. Fitzgerald, W. J.: Miss. Valley M.J. 82:146, 1960. 5. Forsyth, H. F.: J.A.M.A. 167:163, 1958. 6. Meyers, G. B., and Urbach, J. R.: Penna. M.J. 64:876, 1961. 7. Truitt, E. B., Jr., Morgan, A. M., and Nachman, H. M.: South. M.J. 54:318, 1961. 8. Weiss, M., and Weiss, S.: J. Am. Osteopath. Assn. 62:142, 1962.

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NEW BOOKS IN REVIEW

A SYNOPSIS OF CONTEMPORARY PSYCHIATRY. 3rd Edition by George A. Ulett, M.D. and D. Wells Goodrich, M.D., The C. V. Mosby Co., St. Louis, Missouri, 1965, 299 pp, $6.75.

Reviewed by: LOUIS H. NAHUM

Since the last edition in 1960 there have been further advances in psychiatric treatment and several discoveries in psychopharmacology which have quickly been integrated into practice, and found in this handbook.

Clearly the psychiatric house officer and the general practitioner needs a ready reference to acquaint himself with the psychological problems of his patients and intelligently provide early care for the patients who develop mental illness.

There are three general sections: history taking and diagnostic procedures, clinical syndromes and therapeutic measures. It is easy to find information on any particular subject in the table of contents and also in the alphabetized index at the end of the book. It is small enough to carry in one's pocket and will be seen widely among psychiatric residents.

We are very much still in the era of descriptions of symptoms and behavior although one school concentrates upon theoretical formulations of psychological dynamic mechanisms. This latter is not emphasized in this handbook. It is true that biochemistry, neurophysiology and psychopharmacology are contributing much material and that the basic knowledge and psychodynamics have not as yet been unified if indeed it ever will. For the present psychiatrists look for, and act, as if life experiences play the dominant role in afflicting an individual's pattern of behavior, feeling and thinking.

Genetics in psychiatry is another burgeoning field in which the "person *without affect*" may be an example as well as certain mental aberrations and retardations. But this perhaps we will find in Edition 4.

There is a short history of psychiatry in which Ego psychology is virtually bypassed although a small chapter on child psychiatry attempts to repair this fault.

On the whole this handbook is an excellent guide to the beginner in psychiatry and to the general practitioner who is always in need of guidance in this important health program.

GUIDE FOR REFERRAL OF FAMILIES TO COMMUNITY HEALTH AND SOCIAL SERVICES. Prepared by Department of Maternal and Child Health, Harvard School of Public Health Under the Direction of Elizabeth P. Rice with the assistance of Mrs. Florence M. Cyr and Mrs. Ruth Cowin.

Reviewed by: LOUIS H. NAHUM

This book is an attempt to assist physicians and nurses for the purpose of (1) suggesting a way of identifying problems which may affect the child's health or social adjustments, (2) to indicate the appropriate resources for help and the method of obtaining the services.

The Guide was prepared primarily for use in a child health clinic in a public housing development in Boston, but the author believes it will be found helpful to physicians and nurses wherever they practice.

There are three sections. In the first assessment, social history and the referral process is considered. This is of universal value everywhere. Section 2 deals with social and health problems and services available. Obviously, this is clear for Boston, but quite variable in other areas of the country. Section 3 discusses major health and social resources and of course here again elsewhere than Boston any physician or agency using this guide will have to substitute the information about the health and social resources in the specific community.

The book makes clear the important need of social workers in child health clinics especially when complex and critical situations arise. It will be of extreme value to all interested in child health and welfare from physician to nurse, to teacher to social worker.

FUNDAMENTALS OF ORTHOPAEDICS. By John J. Gartland, A. B., M.D., W. B. Saunders Company, Philadelphia, Pennsylvania, 1965, 338 pp. illustrated, $8.00.

Reviewed by: DENIS S. O'CONNOR

Anyone who is concerned with the undergraduate medical school curriculum must be connected with the allocation of time to the many specialized subjects in the clinical years.

The subjects of the first two years are basic and the only question involved is effective and intensified teaching. The clinical years of undergraduate medical education have become vitiated by the endeavor of curricula committees to include all the fracturing specialities which have grown up in medicine in the past quarter of a century and to accede to the pressures of the proponents of each.

The need for emphasis on subjects is changing and the need for inclusion of new disciplines to meet the changing demands of scientific progress is forcing a continuing study of the relative importance of each subject and its time occupancy in the limited available time of the clinical years. The already lengthy period of formal study required for qualification in medicine and the great financial costs precludes extension of the time allotted at the present time. It, therefore, becomes most important that the time devoted to traditional subjects be sharply delineated and the method of teaching be scrutinized continuously in order that the maximum value be squeezed from each hour of instruction.

It is for those reasons that this book on "Fundamentals of Orthopaedics" warrants enthusiastic reception by medical educators and students and could well be the approach for other specialties of medicine and surgery.

A reversal of the trend to specialty teaching in the undergraduate years a return to the teaching of medicine and surgery could do much to restore a sound appreciation of the principles of sound medical diagnosis without which therapeutics becomes "soap box medicine."

One of the unfortunate aspects of specialty training in many of the surgical specialties is lack of training in the

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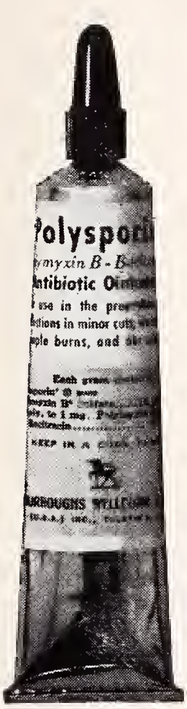

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basic principles of surgery and medicine and an over emphasis of specialty techniques. The protection of the patient on the table today depends less on specialty technique than on overall surgical judgment and general medical know how.

The reviewer would disagree with the author's introductory statement that orthopaedics is a fast expanding subject. Within the professional lifetime of the reviewer he has seen the practical control of infections on which blood borne osteomyelitis and joint infections were pendent, the virtual elimination of joint tuberculosis and the elimination of poliomyelitis all of which constituted the basic professional load of fifty years ago.

To be sure, other conditions have come under the control of the orthopaedists such as fractures which never can be the sole province of the orthopaedist. The proliferation of general surgeons has given rise to the traumatic surgeon who with a general surgical training is much better qualified to handle the multiple injuries of the ordinary highway, industrial and disaster victim so common today and likely to continue to be tomorrow. The physiatrist has preempted a sizable segment of the non-operative orthopaedic field—a fact deplorable in itself because physiatry, a non-surgical specialty, often lacks the judgment and incentive to apply surgical procedures when necessary or at the proper time.

The care of the feet has been largely neglected by the orthopaedic world resulting in the loss of that large field to the podiatrist.

The specialty of hand surgery, a vital and long overdue subdivision of surgery, has rightfully preempted that section of the skeletal anatomy.

Anything new which is likely to be added to the orthopaedic field in the future is going to require the training and ability of a highly qualified general surgeon.

Orthopaedics, therefore, appears to the reviewer as a declining specialty and the time devoted to it in the undergraduate medical school clinical years could with benefit to the curriculum in general be sharply contracted. It is for this reason that Dr. Gartland's book is so enthusiastically received. The field of orthopaedics, for the purposes of the medical student, is adequately covered without inclusion of the detail and the controversial which might be proper for the more advanced student. In the content of general surgery, this book could give the student the essential familiarity with orthopaedic terms and conditions about which he would be expected to have a general knowledge. Even in general practice this book on his desk could serve as a quick ready reference on the common orthopaedic conditions.

This book should be recommended to medical students, hard-pressed curriculum committee members and general practitioners. It may not be so readily accepted by the academic orthopaedic field where expansion in thinking may have more appeal than improved medical education.

THE ALLERGIC CHILD. Edited by Frederic Speer, M.D. By 38 authors. Hoeber Medical Division, Harper & Row Publishers, Inc., 586 pp., with 132 illustrations. $16.50.

Reviewed by: CHARLES A. WOODS

In recent years much energy and interest has been generated over the subject of allergy. The field is certainly one of controversy, and its boundaries are often very blurred and ill defined. This impressive book contains information from 38 authors who have made a valiant attempt at presenting concise factual material with little unnecessary repetition.

The book is divided into five sections; introduction, causes of allergy, manifestations of allergy, etiologic diagnosis of allergy, and the treatment of the allergic child. The approach is very logical, however, it is sometimes difficult and time consuming to look up one particular problem scattered through two or three chapters.

The introduction presents a very interesting history of allergy and some early forms of therapy. Also in the introduction is a chapter on the characteristics of the allergic child in which some controversial points are made such as the consideration of a child being allergic when he presents with a fever of 105° F. or more and does not appear especially sick, and the question whether allergic children have intellectual superiority, and that definite colic is allergic in origin.

Section 2 deals with the causes of allergy such as pollen, mold, nonseasonal inhalant, food allergens, infection, as well as physical, climatic and psychological factors.

Section 3 defines the manifestation of allergy with descriptions of their etiology, pathology, clinical features and on many occasions differential diagnosis. The chapters in this section on collagen and autoimmune diseases should perhaps be left for inclusion in another text.

Section 4 presents information for an allergy survey, indications and methods for skin testing, and means for detection of food allergy.

The final section is a superb collection of the treatment of various allergic disorders. Two excellent chapters are included which deal with the chemistry and pharmacology of the antihistamines and steroids.

The volume should make a valuable contribution to any physician treating allergic children. Extensive references at the end of each chapter should enable the pursuit of additional material. Many excellent illustrations, tables, and charts are included in the various chapters.

Combat Fatigue Lives On

It has been 20 years since they came home, but many World War II veterans still experience the sweaty hands, the jumpiness and the nightmares they acquired with combat fatigue.

Instead of fading away, these symptoms may be becoming more severe as the men get older, suggests a report in the current Archives of General Psychiatry, published by the American Medical Association.

Combat fatigue sufferers were found to over-react to sounds of airplanes, firecrackers, cap pistols and other loud noises, and to combat scenes in movies or TV. Some were irritable, easily tired, or experienced memory and concentration difficulties.

"Combat fatigue syndrome expresses itself not only in symptoms and worries, but in impaired efficiency and morale," said the report by Herbert C. Archibald, M.D., chief of the mental hygiene clinic of the Oakland, Calif., Veterans Administration Hospital, and Read D. Tuddenham, Ph.D., professor of psychology at the University of California, Berkeley.

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Learn to swim and relax in the water.

Never swim alone.

Don't swim when overly tired or when the water is extremely cold.

Don't overestimate your ability and endurance.

Swim at protected pools or beaches under the supervision of a trained lifeguard.

If a boat overturns stay with it and don't try to swim a long distance to shore.

Never dive into unknown waters.

Try new activities only after learning the skills from qualified instructors.

Skin diving and SCUBA diving both are fine sports that are gaining more participants each year. Both require special training and knowledge and a good physical condition. SCUBA equipment needs continual checking to make sure you get sufficient air supply.

Water skiing is an exhilarating sport, but it also has hazards. The man handling the boat should know what he's doing. The skier should always wear a life jacket. Even a strong swimmer can be winded by a hard fall at high speed.

Private pools are gaining rapidly in the United States. If you have a pool, or use a neighbor's, observe some fundamentals of safety—

Is the pool kept clean and the water chemically purified?

Walk, don't run, about the pool, and be careful with horseplay.

Fence the pool and keep the gate locked to keep out small children.

Keep rescue equipment, such as long poles and and ring buoys, handy.

Keep bottles and glasses away from the concrete or metal pool deck.

Are all in your family good swimmers? If not, arrange lessons at the YMCA or some other center in which qualified instructors conduct classes. Many drownings occur among non-swimmers or weak swimmers. A refresher course even for good swimmers might save a life by helping the swimmers get into better physical condition.

Know about artificial respiration and how to apply it. The mouth-to-mouth method is explained in the First Aid Manual of the American Medical Association. It's not very difficult, but start immediately, even in the water; the victim can survive without oxygen to the brain for only a few minutes; with the victim's face up, pull the chin forward, make certain the windpipe is clear; put your mouth over the victim's mouth, pinch shut his nose, and blow; repeat 12 to 15 times per minute; keep it up until medical help arrives.

Most important of all to safe swimming—if you get into trouble in the water, don't panic. Float on your back and paddle gently. It's possible to stay afloat for hours, if you don't panic and wear yourself out with futile threshing.

Rats Can Detect Radiation

Can man sense low doses of radiation?

Rats can, according to a report in the current Journal of the American Medical Association.

If humans also can detect radiation, it may help to prevent their serious injury in the future.

"The risk of industrial accidents in nuclear reactors, to say nothing of the dread possibility of atomic warfare, adds new urgency to finding the answer to this query," the Journal report said.

Rats can be aroused from sleep by exposure to about 20 milliroentgens of x-radiation in the air, according to the report by Bernard H. Feder, M.D., of the Department of Radiology, University of California at Los Angeles Medical School, and the Radiology Service, Veterans Administration Hospital, Long Beach, Calif. The report is primarily based on research at the VA hospital by Dr. Feder and others.

Properly conditioned rats can detect x-ray exposure of less than 20 milliroentgens in the air, Dr. Feder said. Somewhat higher exposure, in the range of 10 roentgens, was consistently avoided by conditioned rats.

The rats seemed to detect radiation best through their olfactory bulbs, the organs which also react to scents. However, abdomen exposure produced the greatest "avoidance reaction" to radiation.

There is no evidence of irreversible injury to the rats from x-ray exposure at the levels required to demonstrate these effects, Dr. Feder said.

Medical Evidence From A Historic Night

Medical details of the stabbing of Secretary of State William H. Seward on the night President Abraham Lincoln was shot 100 years ago are analyzed in the current Journal of the American Medical Association.

The attempted assassination of Seward was part of a larger plot to kill President Lincoln, Vice President Andrew Johnson, Seward, and perhaps others.

On the night of April 14, 1865, Lewis Payne, a Confederate deserter, talked his way into Seward's house and wounded the Secretary, his two sons, an Army private and a State Department Courier.

All five of the wounded men survived, but Mrs. Seward suffered a series of heart attacks after the turmoil, and died two months later.

The Sewards' daughter, Fanny, never recovered after witnessing the attack on her father. She went into a slow decline and died 18 months later.

After examining medical evidence, John K. Lattimer, M.D., of the College of Physicians and Surgeons of Columbia University, New York, concludes that "it is amazing that the powerful Confederate soldier (Payne) armed with a revolver and a knife, failed to kill any of the five people whom he attacked by frontal assault, whereas (John Wilkes) Booth, acting with stealth and cunning, succeeded (in killing Lincoln) with a single-shot Derringer."

Dr. Lattimer also says it is difficult to determine how many wounds Secretary Seward suffered during Payne's knife attack. Those who attended him later gave conflicting testimony.

At the time of the attack, Secretary Seward was immobilized in bed, recovering from a broken arm, broken jaw and concussion suffered in a carriage accident nine days earlier.

To force his way into Seward's bedroom, Payne first attacked Seward's son, Frederick, the Assistant Secretary of State. He fractured young Seward's skull in two places by striking him with a pistol.

Despite these serious wounds, young Seward continued to grapple with Payne, past his sister's room, past his own room, and into the door of his father's room which was being opened by Seward's daughter and the male nurse, Army Private George T. Robinson.

Private Robinson, convalescing from war wounds, was struck in the forehead by Payne's knife. He wrestled with Payne, who struck several knife blows at the prostrate Secretary of State.

Meanwhile, Major Augustus Seward, the oldest son, entered the room and wrestled Payne from it. He was cut on the head and hand.

Payne fled down stairs, pursuing State Department messenger Hansell, whom he stabbed in the back. Payne escaped, but was captured later in Washington, D.C.

"Fanny Seward's admitted inability to remember exactly what she did during the butchery of her father and brother provides a striking parallel for the acute amnesia of Mrs. Kennedy for her actions immediately after the late President Kennedy was shot," said Dr. Lattimer.

Dr. Lattimer said Secretary Seward's major stab wound was a zigzag slash below the right cheek bone, which exposed the jaw fracture suffered nine days earlier. There were superficial cuts around the neck, and a moderate cut in the left side of the neck, into the parotid gland.

Whether these cuts were all one long slash or the effects of several stabs cannot be determined from the available evidence, Dr. Lattimer said.

The attending physician's statement "that he thrust his unsterile fingers into Hansell's wound to see if the lung had been penetrated, gives the modern reader the same startled sensation as when he reads of the doctor's probing into Lincoln's brain with unsterile fingers in a vain effort to reach the pistol ball," Dr. Lattimer said.

"It is hard to realize that these men did not know that bacterial contamination causes disastrous infection," he said.

Secretary Seward was wearing a heavy collar which is credited with deflecting some of the knife blows.

However, "the often quoted legend that the collar . . . was used to hold his broken jaw in place is not borne out," Dr. Lattimer said. "It seems likely that such a collar would have been used to keep his neck, which must have been severely twisted, from wobbling or flexing."

"It seems entirely possible that this collar stopped the point of the knife from plunging down into the thorax, where it might have killed (Seward)," Dr. Lattimer said.

Child Abuse

North Carolina has become at least the 15th state to enact a child abuse law during a 1965 legislative session (*The AMA News,* May 3). It grants immunity from civil libel action when suspected cases of child abuse or neglect are reported by physicians, school teachers and welfare workers "without malice," but does not require such reporting.

Connecticut Medicine

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Connecticut Medicine

editorials

The Medical Profession And The Government

It appears as though American society has decided rightly or wrongly that government, and particularly Federal Government, will play an increasing important role in the financing of medical care. The important question becomes how to prevent the government role from becoming completely dominant and how to direct the efforts of both government and the medical profession into a partnership in the health field in which federal control will be avoided and Federal *support* will be used to provide for the American people a form of insurance against illness which they seem earnestly to desire.

To ensure that medical care be free of government administration and control, which the medical profession and most students of the subject believe is the best way to serve the health of the people, there must be provision for financing adequate medical care for those unable to meet this responsibility by voluntary prepayment plans or by direct payment. Such provision is the responsibility of the community, the state government, charitable agencies together with such Federal grants-in-aid to community groups and state governments as are needed.

As we have become accustomed to these principles and the social changes that underlie them, we are suddenly confronted with a report to the President by a commission on Heart Disease, Cancer and Stroke which proposes sweeping changes in the structure of American Medicine. Twenty-eight Commission members and a staff of 13 labored over a year to consider the complicated medico-social problem. It would help us to know the philosophy of the active members of the group so that we could better understand the bias or shall we say the social philosophy by means of which they viewed the scene. Perhaps, however, it will be easier to understand this if we look upon their recommendations with some attention.

The report begins with a statistic that the above diseases cause 71 per cent of all deaths. This may be true. The estimate that the gross national product is reduced by 43 billion dollars by these diseases in direct cost and loss of productivity may also be true. The fallacy here may be implicit in the assumption that this loss is preventable, since sooner or later people will die and we must face a good part of the loss anyhow.

There are some recommendations that no one would quarrel with, such as increased financial support to medical schools and support to training health personnel; incentive grants to stimulate community medical planning; increased public education on health matters; development of a national medical audiovisual center; and many procedural and structural changes are suggested for various federal agencies. One proposal to flood more money into present medical research programs is very arguable. What well prepared researcher with a sensible project is in want of financial support? Those of us who know something about this subject are well aware that it is not

THE COVER

VESALIUS AND THE ANATOMY OF MAN

ANDREAS VESALIUS of Brussels, the first great teacher of anatomy from natural observations, conducted many anatomical demonstrations on human bodies while Professor of Surgery and of Anatomy at the University of Padua, 1537-1543. Highly successful, these were attended by medical students, physicians, interested civic officials, sculptors, and artists. First to break with Galen's 1400-year-old anatomical texts, Vesalius published *Tabulae Anatomicae Sex* in 1538, and in 1543, the monumental *De Humani Corporis Fabrica*. Though reviled and ridiculed by Galenists, Vesalius' works soon overcame his detractors and became classic in medical literature.

lack of money but the difficulty of finding the man with ideas to support.

The major problem arises from the proposed network of 60 regional centers for clinical investigation teaching and patient care for patients suffering from heart disease, cancer and stroke. In addition, 450 diagnostic treatment stations would be established by "experts" to funnel patients towards the regional centers. Nothing is said about the size of these units which is left to the imagination. Nothing is said about exactly how these units differ from existing hospitals already taking care of such patients. Presumably at one time or another 71 per cent of all Americans would qualify for admission and receive *free care* while under investigation and care.

The Commission imagines a typical heart station to provide complete out-patient diagnostic and treatment facilities for any patient with heart disease. Hospital beds and emergency surgery would be available around the clock. The commission hopes that after fifteen years of operation they would become "self-supporting!" It is clear that this visionary plan might with one stroke completely recast American medicine as it exists today. What is wrong with this vision?

First of all is the failure to recognize that medical care facilities have largely developed as an expression of local needs and have been supported by the community with some recent assistance for bricks and mortar by the government but not in the operation of the facility. Second is the failure by the commission to recognize that National research and teaching has evolved around private and state medical schools and their associated hospitals. Here again the government has cooperated excellently in offering financial support to the research and teaching without fundamentally altering their operation in any way.

If we follow the commission report there is bound to be a fundamental shift in this balance into a new uncharted field. We are not told if the regional centers are to be small and their activity is to be primarily directed towards research. If so, why can't these centers be integrated into established organizations. If this is the intent, then all the commission is offering is a way of infusing extra capital into clinical research. Implicit in this is the assumption that "program research" will by dollars and cents solve the problems of heart disease, cancer and strokes. The answer might come from an earthworm or a bacterium, in other words from basic science. In short, money cannot buy the interest of a trained scientist, the relative attractiveness of various research fields nor the state of scientific development in these fields. Even though medical research must provide tangible benefits for today, it is the theoretic benefits upon which we look for tomorrow's gain.

If the centers are realistically to provide care for 71 per cent of our population, the facilities will necessarily be huge and eclipse their associated medical centers. It will mean federal entry in a big way into a program of patient care lacking local support and responsibility and what is worse, in actual competition with pre-existing units. We do not believe the public if they understood would want the federal government to operate a large portion of the medical facilities of this country.

Who is to decide where these centers are to be located? How will the committee overcome the factor of politics in locating the center? How will they decide for example that New Haven should have a stroke center and whether it should be affiliated with Yale or the University of Connecticut, or St. Raphael's or St. Francis? If one hospital is chosen should the others close their doors? How will they be able to compete financially?

If a specialized hospital will be established unaffiliated with existing facilities, this would be a trend away from the present tendency towards integration of many specialized units with a general hospital to the benefit of each party. This tendency has arisen from the need to avoid inbreeding and to seek the general stimulation, supervision and criticism that comes from a broadly oriented scientific environment. Think of the sterile environment that might be found in an isolated cancer chemotherapy program unit and how its tendency would be to quickly run down hill.

Even more important is the absence of any proof that enlarged clinical-research units within the present frame-work of medical centers could not carry out the augmented responsibilities. How could a member of new cardiac units be better than those already integrated in the medical and surgical services of the existing hospital centers? This is aside from the question admittedly quite serious of where the staffs would come from for the envisioned new institutions.

Then what happens to the patient having some other illness? Is he going to pay with his taxes for those who suffer from heart disease, cancer and stroke? He will not enjoy the thought that his illness which more commonly strikes down victims in younger years should be by-passed for those coming under the commission's interest.

It is admittedly necessary to strengthen research, increase health personnel and plan regionally. But does this require that the whole program of medical care should be rewoven? How will a complex of research centers aid the family physician who is the first line of defense against illness? How will the

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program provide time, incentive, financial support for effective post-graduate education and encourage the translation of already accumulated knowledge into improved practice? Again the real person in American Medicine is not even considered. On "medicare," the government seems to have consulted and listened to everyone *but* the medical profession!

Let Congress, the medical profession and taxpayers carefully scrutinize the program. We as physicians must strive to ward off the ever present threat of complete federal control. We must work consistently for health care programs. If the government is going to enter into the health field in a big way, who has the knowledge in this field but the medical profession? To whom should the government turn for direction but our profession? It is we and we alone who can guide any scheme in the health field to operate in the best interest of the patient.

L.H.N.

Suggestion In Clinical Medicine

All of us knowingly or unknowingly use suggestion in dealing with our patients. Many times we find ourselves unable by the introduction of a logical appeal to the patient, to obtain a satisfactory response. This is because suggestion is a process which determines the uncritical acceptance of ideas. By stimulating the activities of the critical faculties we reduce the effect of the whole suggestive process. In short, suggestion and logical reasoning with the patient do not mix. It is true that at different times we can, and indeed must use either suggestion or logical reasoning to achieve our therapeutic aim but we cannot effectively use both concurrently.

Suggestion is the main psychological mechanism concerned in the induction of hypnosis, but is constantly being used by the physician without hypnosis and therefore some recognition of the factors involved in successful suggestion can clarify how best the tool can be used effectively in clinical practice.

An idea may be accepted into the mind by either of two processes. One is the logical intellectual process in which an idea is evaluated in a critical way and is accepted or rejected on its merits. People who have a fixed and rigid way of looking at things are less suggestible and require more reliance upon logical intellectual processes for action. Any situation that makes the patient suspicious or critical, works against suggestion and in favor of employing the intellectual process for implanting an idea. Meares[1] tells us that a patient who is basically insecure is on his guard and his critical mechanisms come into play. In everyday life people rely more on their critical faculties in the area of their business or professional activity but these same people may be decidedly suggestible concerning health or other areas such as politics in which their knowledge is inadequate and their critical faculties are kept in abeyance.

There is no doubt that many persons suffering from minor illnesses with an emotional component can be helped by a logical approach to their reason. We explain to the patient that his condition is not caused by organic disease of any parts that are concerned. Or we explain that his disease is understood, susceptible to treatment, most often successful. That his anxiety is represented by other symptoms which are caused by his emotions acting through the nervous system. By the thoroughness of our physical examination we convince him that his organic disease is understood or that there is no organic disease present and we give him examples of disordered bodily functions resulting from emotional disturbance. This process we call persuasion.

There is a place for the use of persuasion in modern medicine but it appears to be only a minor one. In the first place many nervous illnesses of any severity are not accessible to such superficial treatment. In the second place, in actual practice the patient has nearly always already been subjected to a great deal of persuasion by relatives and by his family physician before he has been referred to a specialist. Persuasion is different from suggestion in that it alerts the intellectual and critical functions of the mind and interferes with the patient's suggestibility.

The factors which determine the acceptance of an idea by suggestion are largely dependent upon the emotional state of the subject and his affective relationship with the person offering his idea and for the most part they are independent of the logical merits of the idea itself. When an idea is lacking in logical merit and it is accepted, it is easy to recognize suggestion as the effective mechanism. An easy suggestion is an idea offered to the patient which does not conflict with the logical appraisal of the situation. For example, "you are comfortable" are suggestions consistent with the factual situation of the patient. He accepts the suggestion and is more relaxed. A difficult suggestion is one which is a travesty on logic and conflicts with a critical factual assessment of the situation; for example, telling a patient, "Your arm is very heavy," or "Your pain is leaving you." In such a case the suggestion conflicts with a critical factual assessment of the situation. The greater the illogic of a situation, the greater is the tendency of the critical intellectual faculties to intervene and halt the process of suggestion.

Among the factors contributing to successful suggestion are the affective relationship between patient and doctor, prestige of the doctor, successful non-verbal communication, facilitation, grading of the suggestions, drugs and fatigue.

The affective relationship is important. If a suggestion is put forward by a stranger or one we are suspicious of, it is likely to be examined on its logical merit, accepted or rejected. A person in love will readily accept suggestions from his partner, when he would easily reject the same suggestion by some other person. The moral is clear that a physician if he wishes to influence his patient must study how to establish an affective relationship with his patient.[2]

If a physician has prestige the patient looks up to him and his suggestions are accepted. The physician by virtue of his professional standing usually enjoys prestige. The interne has less prestige than the attending physician who in turn has less than the consultant. The first will find it much more difficult to have his suggestions accepted than the latter or last. Of course, it may be accepted or rejected according to the way in which the suggestion is offered to the patient. Offered timidly and tentatively it may be rejected, but the same idea expressed with confidence may be accepted. In any event the suggestion should be conveyed to the patient in a way assuming that it will be accepted without any possible doubt whatsoever.

The actual means by which a suggestion is communicated to the patient may determine its acceptance or rejection. We express ourselves to our patients not merely verbally but by our expression, our gestures, our general behavior. Ideas expressed by these non-verbal means of communication are often more readily accepted by suggestion. This is so because these means of communication do not invite the critical examination of the idea in the same way as verbal expression does.

Skill in suggestion involves the recognition that acceptance of one easy suggestion always aids the acceptance of another suggestion and so on to the most difficult ones. This process is in a way analogous to physiological facilitation. In a general way the acceptance of each suggestion continues to increase the subject's suggestibility and so could lead on even to hypnosis. If the first suggestion is easy to accept, the patient will more likely accept the next more difficult one. This skillful grading of suggestion is an essential factor in the induction of hypnosis by suggestion of relaxation. But it is also an important technique for the physician to recognize in his effort to suggest ideas to his patients without hypnosis.

When the patient is in a state of expectancy he accepts suggestions more easily. Or the suggestion may be specific so that the patient is made to expect something definite. If he is fatigued or given relaxing drugs these also aid the process of suggestion by dulling the critical faculties of the intellect and so allowing full rein to suggestion. In short, the methods of suggestion all involve a process which determines the uncritical acceptance of ideas.

By far the most potent factor affecting the process of suggestion is the advent of hypnosis. In the hypnotized state suggestions are accepted with a readiness which is not seen in the waking state.

L.H.N.

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Hormones And Bisexuality

It has long been assumed that a causal connection exists between gonadal hormones and the development of the capacity of infrahuman vertebrates to display sexual behavior, even though the existence of such relationships in man has been questioned. The uncertainty about this relationship in humans arises from the belief that in man, sexual activity is influenced by many other factors as well, such as psychologic, the social level, cultural background and tradition. The many differances in behavior which in the growing child and adult are socially rather than hormonally determined, seem to have obscured the possible role of the hormones in maintaining the strength of the sexual drive.

In lower mammals the same quantity of hormone elicits many modes of response and this fact may have contributed doubt that there is any great degree of specificity. In the human female, sexual responsiveness does not have the sharp relationship to folliculogenesis and the functioning of the corpus luteum in the ovary that it does in most lower animals. The need for testicular androgen in the male in maintaining sexual vigor has given rise to question, because castration does not immediately lead to a disappearance of sexual activity, rather it persists for weeks or months, and the restoration of sexual vigor by replacement therapy also requires weeks in the male, but only hours or days in the female. It would appear that the manner of hormonal action in the male is greatly different from that in the female.[1] Additional confusion seems to have come from studies of deviant sexual types, which led to the conclusion that the establishment of gender roles or psychologic sex can be independent of hormonal sex or morphology of external genitalia.

After much experimentation and observation Young[1] established that latent mating behavior in female, of many mammalian species is brought to expression from two participating hormones, not estrogen alone but progesterone also. It is the synergistic action of the two hormones in combination that is required to produce female mating behavior. Studies of the female guinea pig and rat revealed that differences in the vigor of behavior were not related to the quantity of administered hormone provided a threshold had been exceeded. Such findings led to the realization that the nature of the latent behavior brought to expression by the gonadal hormones depends largely on the character of the soma or substrate on which the hormone acts. For example, Goodale in 1918 was unable to feminize capons by transplanting ovaries into them. He felt that the gonad merely determined sexual expression but required a substrate upon which to act. Since then this substrate was assumed to be a required neural organization.

When an investigator tries to account for the behavioral differences between individuals, besides looking to the gonadal hormones, he would do well also to look to the factors which influence the character of the tissues on which these hormones act. When this was done certain patterns emerged. First was the recognition that during early infancy responsiveness of the tissues to injected gonadal hormones was minimal and then increased gradually to the level observed in the adult. Second was the recognition that there was a high degree of hereditability of sexual differences in behavior. In the male guinea pig, for example, strain 13 was found to inherit a specific behavioral characteristic of frequency of mounting, whereas latency of ejaculation was dominant in strain 2. Similar differences in certain aspects of female behavior was also found to have independent modes of inheritance.

Finally experimental or psychologic factors were also found to have a role in the determination of the character of normal patterns, for animals raised in isolation displayed an inability to properly mount and clasp the female and this inability was not overcome by testosterone injections. Therefore the inability cannot be attributed to a hormonal deficiency. The effect of isolation on maturation of the behavior of the female is less pronounced. The guinea pig is not alone in needing contact with other animals for maturation of normal behavior. This need has been demonstrated many times in species widely separated phylogenetically as ring doves, domestic turkeys, rats, cats, rhesus monkeys, chimpanzees and man himself.

The next question that Young considered was whether gonadal hormones serve to organize the tissues mediating sexual behavior during differentiation. Perhaps the action is organizational before birth or before sexual maturation, and activational in the adult. Dantchakoff had already produced in female guinea pigs given testosterone prenatally, both female organs like oviducts, uterus and vagina along with male organs like epididymus, ducti efferentes, seminal vesicles, prostate and Cowpers gland together with a penis, a true hermaphrodite. Young, repeating Dantchakoff's experiments, once a satisfactory method of administering the hormone had been developed produced pseudo hermaphroditic females routinely. It became clear that testicular androgens have a dual role in the control of sexual behavior in the guinea pig. During the fetal morphogenesis, androgens exert a fundamental influence on the organization of the soma.

As the male develops, fetal testicular hormone is responsible for the differentiation of the Wolffian duct systems (precursor of the male genital tract) and the suppression of the Muellerian duct system (precursor of the female genital tract). When he administered androgen to a developing female fetus, animals were produced with tissues having potential capacity for mediating masculine behavior. On the other hand he postulated that genotypic males castrated before the period in which the organizing action of the fetal testicular hormone ordinarily occurs would display feminine behavior as adults. The experiment was easy to perform on rats, in whom the organizational period is postnatal and ends at approximately the 10th day after birth. As expected, males castrated at birth displayed feminine behavior as adults. In short, females treated with androgens during an appropriate period, show a regression or inhibition of female behavior and an accentuation of masculine behavioral traits. Males deprived of the principle source of androgens during a comparable period show accentuation of feminine behavior and an absence of masculine behavior.

The next problem Young and his associates studied was whether the behavior of the female pseudo-hermaphroditic animals was affected in other ways than that which is directed towards the attainment of sexual aims. Monkeys turned out to be better suited for the study of this problem than the rat or the guinea pig. The pseudo-hermaphroditic females threatened, initiated play, engaged in rough and tumble play patterns more frequently than the controls. Like the males they withdraw less often from the initiations, threats and approaches of other subjects.

Young's studies are important because they present an endocrinological basis for the concept of psychologic bisexuality. It can explain the hermaphrodites with ambiguous or masculinized external genitals. Perhaps they had excessive androgen production during morphogenesis. Masculinization of the female fetus is now a well recognized fact when androgens were given to mothers during pregnancy.

The analysis of the relationship of the hormones to sexual behavior and to sex-related behavior leaves many questions still unanswered. But the field is growing, neurologists will be searching for neurological sites of hormonal action and define the pathways of stimuli for the many responses that are given. Biochemists will be attempting to clarify the mechanisms of hormonal action in organizing the tissues of the central nervous system during development.

There is great need for studies of sexual behavior in man. We must know whether the many behavioral states are associated with hormonal action in the developing fetus and in the adult. From the work mentioned above, there is a good possibility that such relationships exist and that typical and deviant sexual behavior do have a physiologic as well as a psychologic basis.

L.H.N.

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Science Tools:

11. Determinations Of Red Blood Cell Life Span In Man

Variations of the total volume of circulating red blood cells are the result of a change either in the rate of production of cells or the cell life span. Methods for the determination of the rate of cell production have already been described by Huff[1] who used radioiron. The measurement of the red cell life span in man has recently been reported by Berlin.[2,3,5] There are at present two classes of direct methods for measurement of red cell life span, the cohort method and the random labelling method. The cohort method requires the introduction of a label into newly formed synthesized cells, and from time to time the quantitative persistence of the label in the circulating erythrocytes. The biosynthetic precursors used are glycine C^{14}, glycine N^{15}, and glycine H^3, and a radioactive iron Fe^{59}. The random method is to label already formed red cells either in vitro or in vivo by the use of di-isopropyl-fluorophosphate (D.F.P.) which in Berlin's hands turned out to be the most satisfactory agent currently available. Red cells may be labelled with Cr^{51} by mixing whole blood in a suitable anti-coagulant with $Na_2Cr^{51}O_4$ for 45 minutes. Then the entire mixture may be injected or the cells may be washed and the 10 per cent to 15 per cent of the Cr^{51} not bound to cells removed. This method is being replaced by D.F.P. diisopropyl fluorophosphate.

In man the erythrocyte life span so determined is finite. A crop of new cells survives for at least 90 days and then individual cells begin to be removed by the reticulo-endothelial system. The largest number or removed sometime between 115 and 120 days. The day that this occurs is designated as the mean red cell life span. The only alteration in red cell life span is shortening. There may be random destruction by constant removal of cells irrespective of their age but this is small both in dog and man but very large in the pig.

There are two principal classes of applications of measurements of red cell life span. The first is the study of the red cell life span in normal man and in an increasing number of experimental animals. The second is the study of alterations in red cell life span resulting from applied variables in the experimental animal or various disease states of man. There are several technical problems in the measurement of red cell life span in disease states which must take into account variations in the rate of red cell formation or life span as a result of the disease itself or its treatment. External or internal bleeding will appear to shorten the life span depending upon how many cells are lost.

When the red cell life span is shortened it is associated with some intrinsic red cell defect such as occurs in the hemoglobinopathies (sickling) and red cell enzyme deficiencies, or some extrinsic mechanism that causes the cells to be removed prematurely such as in the presence of hemolytic antibodies.

In a number of clinical solutions the red cell life span measurements can be of value in diagnosis and management. These include hyper-splenism, diagnosis of unexplained anemias when a simple morphologic basis is not apparent. Congenital nonspherocytic hemolytic anemias and evaluation of therapy in hemolytic anemias can be better understood. Finally a shortened red cell life span without other obvious cause points to the existence of occult bleeding.

The study of the red cell life span has already uncovered some problems concerning our current techniques of cross matching. Although not widely known it has been shown that in approximately 30 per cent of transfusions of small volumes of apparently compatible blood, the transfused cells survive only 14-16 days and then are rapidly removed.[4] This has been interpreted as an indication of the development of hemolytic antibodies, although they usually cannot be demonstrated by the available serological techniques. The patient who is given multiple transfusions will then develop multiple sensitivities and gradually the red cells of

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*** Denotes resolution of at least 50%.*
** Denotes resolution up to 50%.*

DURATION OF TREATMENT

Number of Cases	14	24	18	14	9	3	7	4
Duration (weeks and months)	2 wks.	1 mo.	2 mos.	3 mos.	4 mos.	5 mos.	6 mos.	8 mos.

The types of psoriasis included (parentheses indicate number of cases); Generalized (31), Palms and soles (7), Legs and feet (18), Scalp and ears (27), Groin (3), Neck (5) and Vulva (2).

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succeeding transfusions will have a shorter and shorter survival. This is why, in the patient given a large number of transfusions at one time, it is likely that many of these transfused cells will survive only two weeks causing then a rapid fall in total circulating red cell volume. Doubtless many other obscurities in red cell physiology will find their explanation from application of this new tool.

L.H.N.

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The Thymus:
3. Immune Tolerance And Auto-Immunity

A specific inhibition of the immune response can be induced in normal animals by injecting a particular antigen at birth. It can also be produced in adults by injecting large doses of an antigen. If an animal has been irradiated or treated with radiomimetic compounds, then he will not respond antigenically to an injected antigen. This state, inhibition of the immune response ("immune tolerance") will then persist as long as the concentration of the antigen remains above a critical level. Should the concentration drop below this level, tolerance "breaks" and the capacity to respond to the antigen reappears.[1]

Does the thymus play any role in acquired "immune tolerance"? There is much evidence that the thymus is involved when there is a breakdown of tolerance. For example, whole body irradiation accelerates the breakdown of a tolerance state. We know that the thymus is essential for the recovery of immune functions after body irradiation. It is likely that it is also responsible for the breakdown of "tolerance" under such circumstances. For example, if an adult is tolerant to a specific antigen, then removal of the thymus prevents the reappearance of reactivity with respect to this antigen. It would appear that a thymus dependent mechanism causes the breakdown of tolerance to occur. The thymus probably generates new uninhibited cells.

We all enjoy permanent auto-tolerance unless we develop an auto-immune disease. One view of autotolerance is that our lymphoid cells are constantly in the presence of autoantigens (our own proteins). However, it is difficult to conceive how our lymphocytes would be able to react to so many thousands of different proteins of which we are made so as to maintain a state of auto-tolerance permanently. We still need a good explanation for auto-tolerance.

When tolerance is induced experimentally by chemicals or irradiation, the thymus does play a key role in the breakdown of this induced tolerance. Can it be that the thymus is also responsible for the breakdown of auto-tolerance and hence for the development of auto-immune disease? Such evidence has been obtained in normal mice thymectomized at birth and then grafted with a thymus from a strain of mice with a genetically determined auto-immune disease. Such mice themselves now develop auto-immune phenomena.[2] The grafted thymus from an animal with auto-immune hemolytic anemia now show numerous germinal centers, lymph follicles and accumulation of plasma cells and mast cells.[3] Very similar lesions as well as thymic tumors have been described in patients with myasthenia gravis, systemic lupus, rheumatoid arthritis, aregenerative anemia and other diseases thought to have auto-immune manifestations.[4] This, of course, could be explained if we assume that the thymus is a target organ for auto-immune manifestations. Or it might be that in auto-immune disease as a result of a somatic mutation in a specific tissue, a new protein arises which is now foreign to the body and against which the thymus is over-reacting to produce immuno-competent cells.

In auto-immune disease states, germinal lymphoid centers also appear in other sites where they normally do not occur, for example, in the salivary gland of Sjogren's disease, in the skin in cutaneous lupus, in the thyroid in Hashimotos disease, in the colon in ulcerative colitis, in the knee joint in rheumatoid arthritis and in the liver in lupoid hepatitis.[5] It would seem that if the involved tissue in auto-immune disease has developed an abnormal protein as a result of a somatic mutation, then the lesions of germinal centers in the thymus and around the tissue itself represents a desperate attempt by the thymus to exert some control over the abnormal immunologic reactivity. Another view could be that lesions in the thymus produce disturbances in its function which leads to its loss of control and consequently resulting in auto-immune manifestations.

There is little doubt that the thymus plays a key role in directing the establishment of a functioning immunologic apparatus. It is necessary not only for establishing normal immunologic potential

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during development, but also for restoring such potential after it has been destroyed or damaged and possibly for maintaining it as it becomes depleted with time. For this reason we may reasonably look for a role for the thymus in auto-immune disease.

Further understanding of the key role of the thymus in immunology must await the development of an in-vitro system in which the response to auto-genic stimuli can be studied at the cellular level.

L.H.N.

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Handling The Pharmacologic Revolution

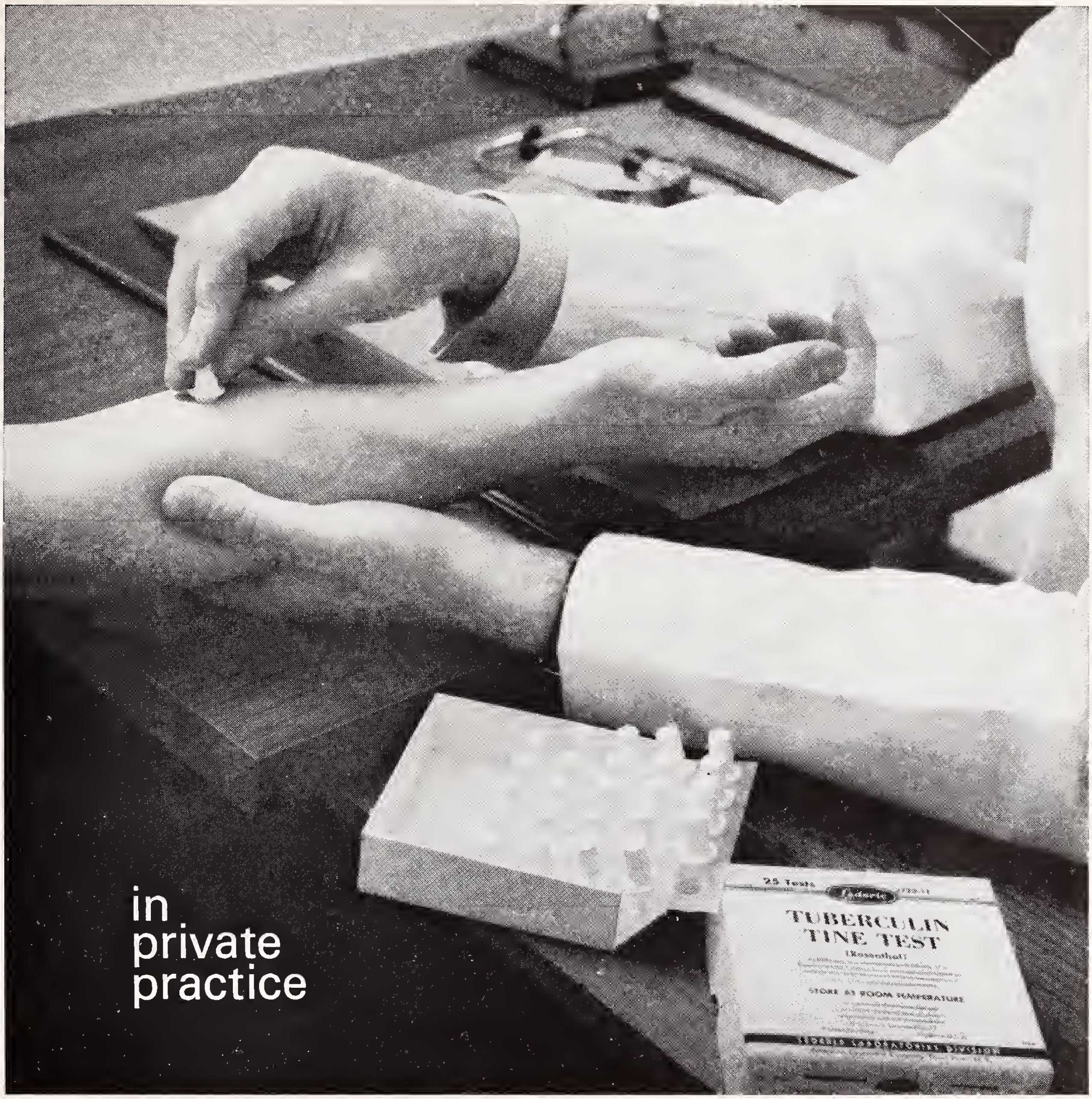
Everything Comes About By Way Of Strife and Necessity—Heraclitus

The practice of medicine is getting more, not less, difficult because of the many powerful drugs put into our hands. How are we handling the problems created by the pharmacological revolution of the last quarter of a century? The doctor's life was simplest when he needed only to concern himself with a small number of proven remedies. Then, he did not need to master a large pharmacopeia. However, as new drugs gradually began to appear, the doctor protected himself in part by certain dicta: "It isn't the anesthetic but the man who uses it" or "Learn to use one digitalis preparation well, rather than many poorly." While sound in principle they also reflect the turmoil created by the avalanche of new drugs appearing.

No doctor is capable of expert judgment on all drugs. He needs to seek quick, authoritative, "unbiased" advice regarding new agents. The anxieties and frustrations engendered in his bewilderment, explain the success of the "Medical Letter" of which there are now 27,000 subscribers, of *Drugs Of Choice Or Current Therapy,* but especially of the detail man. It is his job to present a "me-too" drugs as if it were a great new discovery. Or if it is a new drugs it must be pushed fiercely since many firms are working in the same field. Someone else may be working on a different kind of drug which may soon toll the commercial death knell for an earlier product. We all know how precious time is in a market characterized by rapid obsolesence and fierce competition. And so the drug industry generates certain anxieties in physicians in direct proportion to the rate at which it introduces new drugs on the market. It should be noted, however, that the greatest anxieties do not come from worthless or "me-too" drugs but derive from the marketing of large numbers of unique and excellent drugs.

The detail man obviously is not going to say "Peppo is really not very good for depression and fatigue but it is pretty safe." Nor will he tell you that "Salo is not better or worse than any of the eight other related diuretics that you have been using for years." He can't tell you that there is a lucrative market in these drugs and that his firm wants to garner a proportion of the profits. The advertiser is faced with the necessity of some distortion of the fact or not selling his product. He can't tell you, if the drug is first on the market, that there are always uncertainties about its true capacities for good or harm, that it takes years for a drug to settle into its proper place and that his therapeutic and safety claims can only be certified with the passage of time. Such "expert and reliable" advice the doctor receives is obviously suspect and the physician must learn not to accept ex-cathedra his statements as being "infallible truths."

The untoward effects of drugs also constitute a source of discontent among many physicians who are convinced that there is too much prescribing of drugs and that the incidence of toxicity is probably directly related to the number of drugs a patient takes.[1] In addition, there is often friction between the physicians reporting new and serious side effects of a drug and the manufacturers involved. Lasagna[2] describes a common pattern of action as follows: a drug has been on the market for some time apparently doing its job well with a minimum of trouble. Suddenly the drug is alleged to cause serious toxicity or even death. The cases are reported. The manufacturers examines the cases critically and points out that it is not certain that the agent in question was the only cause. More case reports accumulate and clear cut differences of opinion develop. Several clinicians become convinced that mischief from the drug is occurring with some frequency. The firm believes most of the reports can be explained away by one device or another usually by statistics (How familiar is this device by cigarette manufacturers)? Eventually, however, it is demonstrated that the toxicity is reproductible at will in animals or that it occurs



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conclusively in man and the drug is taken off the market.

Who can win in such a situation? The FDA staff certainly can't. If they don't whisk the drug off the market at the first report, they are considered "slothful or gutless" by some doctors. If they do they are accused of being beaureacratic or impetuous or dictatorial by the manufacturers. If they take the drug off the market after due deliberations, they may be attacked both by the manufacturers and those physicians who have gotten to like the drug.

The academicians also may be entering the lion's den. A recent struggle over the banning of some antibiotic mixtures is described by Lasagna as a case in point. An extraordinarily distinguished and experienced panel of scientists recommended to the FDA that "cold remedies" which combined antibiotics with analgesics, antihistamines, decongestants and caffein be removed from the market. A predictable uproar followed. The drug industry resented the move because it would have eliminated a lucrative market. Many physicians objected because they "thought" the mixtures useful. Most academic scientists on the other hand regarded the preparations as irrational and of little value.

Lasagna points out many problems in drug development and marketing arising from insufficient collaboration between the laboratory worker and clinical investigator; also between government "policemen" and industry and universities. The laboratory people who suggest a new drug for clinical trial do not see the problems involved in its evaluation. Neither does the FDA official see the bench experience of either the industrial scientist or university researcher. He believes that no drug should ever be offered to an investigator for study until its sponsor has justified its trial by explaining why the drug is expected to have the clinical value it claims and why such a drug would be wanted if it turned out to have these effects; what unmet needs would it fulfill and in what way might the drug fill a gap in the doctor's drug arsenal. If such advice were followed, there would be a minimum of "me-tooism" and unjustifiable patient risk.

Unfortunately, the formal teaching of therapeutics to students is considered almost an impossibility and at times explained away by the statement "it is taken care of by each clinical department." And so the education of physicians in practice is left pretty much to the drug houses, the medical journals (the medical letter) and a few medical meetings each year. How many medical schools are doing a good job of keeping doctors in their communities up to date on drug therapy? The urgency of the situation keeps growing as more and more powerful drugs are put into our hands. It is time that solutions are evolved, but clearly they cannot be, without the full cooperation of the medical schools, the medical profession, the drug industry and the government.

L.H.N.

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Hyperglycemia And Atherosclerosis

The concept is growing that atherosclerosis can develop as a result of an underlying metabolic abnormality and the defect may be in the area of carbohydrate metabolism as well as in cholesterol metabolism. Ostrander, et al.[1] showed that persons with unequivocal diabetes in Tecumseh, Michigan, had a higher frequency of detectable atherosclerotic disease than the remainder of the examined population, a fact long recognized as a common complication of diabetes. However they also found hyperglycemia with significant frequency among persons who already had vascular disease and concluded the hyperglycemia is at least as important a factor as hypertension and hypercholesterolemia in the genesis of atherosclerosis. Their obvious explanation of this association was that many individuals with vascular disease are mild or latent diabetics in whom the atherosclerotic manifestations overshadow the carbohydrate metabolic abnormality.

Another study by Kuo and Bassett[2] suggests that sucrose may be atherogenic if ingested in large quantities. Patients with hyperglyceridemia showed an increase in lipogenesis and serum triglycerides after ingesting large quantities of sucrose but not after ingesting starch. A similar finding was obtained on patients with normal serum lipids. Others have also implicated sucrose in the development of atherogenesis.[3, 4, 5] Why sugars do it and starch doesn't is at present purely speculative. Perhaps their absorption is very rapid and floods the liver, adipose tissue and other body organs and thereby overwhelms normal metabolic processes. Another thought is that fructose, one product of sucrose hydrolysis, may be the offending sugar. This needs further study. In either case the availability in quantity of carbohydrate particularly sucrose is a relatively recent product of civilization and resulted since the advent of agriculture about 10,000 years ago.

Prior to this period in social evolution man lived by hunting and on berries and certain roots.

His food was largely meat of wild animals and in the course of evolution he developed a biochemical hormonal and enzymatic mechanism best suited to his life and his diet. Albrink[6] suggests that because of the intermittent availability of food primitive man would have to be able to tolerate long periods of starvation between one successful kill and the next. Obviously both traits—ability to fight and ability to starve require expenditure of stored energy.

Of the two chief forms of stored energy fat and carbohydrate fat can be stored in large amounts but carbohydrate can be stored in limited quantities. But the nervous system unlike other tissues can utilize only carbohydrates.[7] One can envision that primitive man could cope with his life only if he could store his reserve calories as fat and reserve his carbohydrates for utilization by the nervous system.

Both muscular exercise and starvation are similar in their ready utilization of fat and conservation of carbohydrate. The mechanism involves endogenous secretion of norepinephrine at the sympathetic nerve endings in adipose tissue with liberation of lipids. In starvation it is probably the growth hormone secretion which produces lipid liberation by adipose tissue.[8]

Carbohydrate conservation and oxidation of fat occurs when the diet is high in fat and low in carbohydrate. It also occurs after periods of 2-3 days of starvation. The limitation of the number of meals to one or two a day also encourages conservation of carbohydrate. In all these instances carbohydrate is conserved for utilization by the nervous system and any excess is converted to fat rather than burned for fuel and the energy needs of the body are met by fat. If the carbohydrate calories are too copious, the result may be manifest as a tendency to diabetes and obesity. Thus Albrink reminds us that although the ability to conserve carbohydrates may have great survival value in times of starvation or limited carbohydrate supply it may carry with it the penalty of an extraordinary ability to gain weight and a tendency to become diabetic should simple or excess calories become available.

In recent years highly purified carbohydrates and an increased intake of calories has led to a change in man's diet from one composed chiefly of protein and fat to one made up largely of carbohydrate. Man's likely metabolic machinery has probably not changed as rapidly as have his dietary habits. The result is therefore a tendency towards obesity, increased transport of fat (hyperlipidemia), and impaired carbohydrate tolerance. These individuals with a genetic predisposition to conserve carbohydrates would suffer the most from dietary changes of civilization brought about by the agricultural revolution. In fact the common association of coronary artery disease, obesity, diabetes and hyperglyceridemia, their frequent familial occurrence, all suggest that the same genetic trait underlies all those conditions. Associated with these clinical states are increased insulin secretion to process the increased load of carbohydrate and insulin resistance such as occurs with growth hormone liberation needed to mobilize fat for energy requirements.[9]

The genetic tendency under discussion may be more common than the usually quoted incidence of clinical diabetes of 1-2 per cent. Mildly impaired glucose tolerance is frequently detected in older persons and as Ostrander, et al. showed also in hypertensive patients and those already showing manifest atherosclerosis. The harmful consequences of the ability to conserve carbohydrate probably became manifest only with the advent of the agricultural revolution and the relative caloric excess and under activity of the western world in the last 50 years.

The lesson to the doctor is that excess calories in the form of sucrose can be atherogenic. That diabetes and obesity and the associated hyperlipemia and hyperglyceridemia cause atherosclerosis. And finally any person with atherosclerosis or even hypertension may have impaired carbohydrate tolerance which should be looked for and corrected as a possible prophylactic approach to prevent progression of atherosclerosis.

L.H.N.

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Circadian Cycles In Man

Each day the body temperature reaches the highest point towards evening and a low point early in the morning. There are also numerous clinical and physiological studies showing that practically every organ and function in the body exhibits a similar daily rhythmicity. The number of dividing cells in any tissue reaches a high and low in a twenty-four hour cycle. The volume of urine excreted oscillates in fairly broad waves and retention of a few days is followed by diuresis. A potent diuretic has far less effect when administered at the end of the diuretic limb of the cycle than it would at the beginning. Gastric activity also describes a cycle in the human, coming on about every three hours and lasting twenty minutes. The accuracy and speed with which arithmetical problems are solved also exhibits a rhythm showing a maximum value at one time of the day and a minimum value at another. Even resistence to disease shows a daily rhythm. A mouse can withstand Escherichiae Coli endotoxin at his subjective midnight but can be killed by the same dose at his subjective noon.[1]

All these rhythms and many yet to be discovered are expressions of a so-called physiological clock which appears to be a basic feature in nearly all living systems including unicellular organisms.[2] We now understand some of the mechanisms involved and have good reason to assume that the rhythm originates primarily in the organism itself but attuned to external stimuli. For example, if insect eyes are blocked, phasing of activity by light is prevented. The light ordinarily stimulates neurosecretory cells in the brain which discharges a hormone along the nerve axons to the corpus allatum which in turn secretes a hormone that functions to increase the rate of respiration and the associated activity. Thus light gives rise to timing of activity by stimulating neurosecretory activity in the brain and the activity of the corpus allalum.[1]

Aschoff[2] has described his results from experiments on human subjects that followed also a circadian rhythm—24 hours more or less—when light was varied in intensity. The experiments followed closely the method first employed on caged finches. The birds display a clear 24-hour rhythm with atypical pattern. All activity is restricted to the 12 light hours whether the light is dim or bright but they are less active in dim light and for shorter spans of light than in bright light. The rhythm has all the characteristics of a self-sustained oscillator. If the conditions are kept constant the frequency of the biological oscillator deviates more or less from 24 hours.

Under natural conditions the circadian period in man is synchronized with the period of the earth's rotation. The most important of these is the day-night changes in illumination and temperature. In dim light the period is longer than 24 hours and shorter in bright light. There is a clear cycle of sleep and wakefulness in experimental human subjects which is also reflected in the rhythm of body temperature and urine excretion relating to intensity of illumination. The subjects living in dim illumination had activity cycles of 25 hours for body temperature and urine excretion. When light was more intense 85 per cent of experimental subjects showed periods less than 24 hours. The slowing down of the oscillator when the subject is exposed to dim light, Aschoff believes results from a feedback between the subjects endogenous activity and the turning off of the light, just as it happens in insects.

There is an adaptive significance of circadian rhythmicity which enables the organism to master the changing conditions in the external world—to do the right thing at the right time. All the rhythms seem to keep a more or less fixed relationship to each other. If any get out of phrase the subject may become uneasy. When they are all in place the subject states he feels especially fit.

There are cases however in which the organism can become truly desynchronized. One subject showed an extremely slow rhythm of sleep and wakefulness with a mean period of 32.6 hours. Contrary to this, the rhythm of body temperature and excretion of water and potassium in the urine had a period of 24.7 hours. Surprisingly, his calcium excretion did not follow either of these rhythms but was bound instead to the activity cycle. Every third or fourth day the rhythms of activity and calcium secretion regained their original normal phase with the rhythms of the three other functions. When all the functions were in phase, were the times when the subject indicated he felt especially well and fit. This then should make us search for data dealing with major dissociations and desynchronizations and when we have them and when to expect them. Or what would be the consequences to the organism if they last for a longer time.

Labban[3] studied this question in students at Spitzbergen. Some she had live on a 21 hour day and others on a 27 hour day. In a few the body temperature and water excretion adapted well to the new condition whereas the potassium excretion remained on a 24 hour rhythm. It is experiments of this kind that may be of major interest for future studies of circadian rhythm especially with regard to problems of applied physiology.

In industry we find allowances made for the fact that workers have a circadian rhythm of efficiency. It is known that accidents and errors in tending machines or in reading indicater boards are most likely to happen at 3:00 A.M.[3] Night workers being slightly out of phase are in general less efficient and suffer psychologically and physiologically during night shifts. They live in a situation of conflict between two tendencies in the circadian system. These unnatural conditions are reflected in a narrowed range of the amplitude of body temperature curve in night workers. How can this problem be solved? Clearly much work is needed in this area to understand how to synchronize the rhythms in night workers.

Another where we find desynchronization, is in Jet travel. If we travel by air from Paris to New York our circadian rhythm keeps on going with European time. Arriving in New York we are out of phase by about six hours. Readjustment to local time takes about 2-3 days during which we feel tired and less efficient. Furthermore as demonstrated in birds, the time necessary for readjustment is not the same when we shorten the light-day cycle once by six hours or when we lengthen it by the same amount. Applying these results to man we have to expect different durations of indisposition after long distance flights eastward and westward. Obviously we need to learn how we can shorten the time required for resynchronization.

We still lack much necessary information but we know that there are self-sustained circadian oscillators which have to be taken into account in many situations of health and disease. How many of our diseases represent simply too little or too much of a cyclic variation in our homeostatic systems. The main properties of circadian rhythm seem to be the same in human beings as in all other organisms. Obviously we have to study them before we can discuss practical problems successfully. Now that we know the existence of basic variations in activity of many organs, further experimentation must surely lead towards a proper application of such basic knowledge to health and disease.

L.H.N.

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A Look To The Future Of Medicine And Medical Practice

Family medicine is not general practice. The latter is disease centered and based on episodic care. Family medicine must be health oriented and offer comprehensive attention to the family. To do this effectively family medicine will require specially trained physician not physicians half-trained in a number of specialties. Since hospitals are trained to treat disease, it is not logical to center the training for family medicine in a hospital. At present the teaching hospital offers residencies for the disease oriented specialist. Where can the family medicine practitioner who is health oriented obtain his training? Carmichael[1] suggests the development of another institution—a family health center where this might be carried out.

Preparation for family medicine practice obviously must begin when a student first enters the medical school. Most agree that the medical school should give a broad basic training in basic medical sciences and application of principles to the treatment of the whole patient. In this sense the medical school will produce an undifferentiated physician. The acquisition of skills in a particular field should come after graduation. This however does not imply absence of basic knowledge in clinical medicine. It does imply that if we are training some physicians to enter family practice, that the goals of a family medicine program must already be understood at the undergraduate level both by the faculty and the student who may be inclined towards family medicine. The school should be the intellectual home and some faculty member who is a specialist in family medicine must be available for the student to identify with.

The philosophy of the school and the faculty member should be such as to introduce the concept of family medicine into the academic environment. It should demonstrate to the student, faculty and the medical profession that family practice is a legitimate discipline and that the care to be given by the family physician is in all aspects comparable to that rendered by other specialties.

It is not certain whether an elective program offered to students in the third or fourth year would satisfy these aims unless the student already knows he intends to enter the family medicine specialty. At any rate there should be an opportunity for a student to be assigned a family which he would serve as their physician under close supervision. The families selected for such student assignments should of course represent a broad spectrum of social class and the director of such a program would have to be a family physician himself with a full-time faculty appointment. There would of course have to be a family health center, located nearby for the patients and a realistic setting for the program.

During the first interne year the graduate physician begins to assume responsibility for the patient's care but the exact nature of the interne experience is not critical. He can have completed a rotating, a mixed, or straight internship in medicine or pediatrics. Once he becomes a resident, in family medicine, he will be based at the family health center and participate in all educational activities. He will receive instruction at the medical school; attend grand rounds at the teaching hospital; learn about laboratory tests and procedures; and attend patients in specialty clinics.

But since the medicine of the future will be health and family oriented he will receive training in social sciences, public health discipline, human psychodynamics and he will remain a scientist by engaging in medical care research. A family physician will need an appreciation of the medical aspects of sociology, social psychology and an understanding of the interaction of society and disease. Such instruction can be offered by the university. At the same time the family practice resident will be assigned to the inpatient services of medicine and pediatrics at the hospital and rotate through the outpatient department of surgery, obstetrics and gynecology, and especially psychiatry. The resident will spend considerable time in the casualty services and the emergency department. Last but not least the disciplines of preventive medicine should be available for the instruction of the resident.

It would help to complete the training of such a resident if he were to be assigned to a county health department or to another community project. Since this would broaden his understanding of public health practices and social problems. At the completion of three years of such residency he might receive a Master of Science in Family Medicine and this would testify to his competence in this field.

This program for specially trained physicians in family practice is based upon the philosophy that medical education is concerned with the production of physicians to satisfy the medical needs of the community. In the future there will be more older people. There is a progressive reduction in infant and maternal mortality. Probably epidemics of communicable diseases will disappear and death due to acute disease will become more rare. There will increase disability from the genetically determined and emotional illness. In the future death will be due more and more to accidents, neoplasms and the degenerative diseases.

Thus in the years to come health, education and disease prevention will be of paramount importance. Early recognition of disease and modification of its course will increase in importance. Psychological, sociological and economic considerations will be as important in arriving at a diagnosis as patho-physiology. Accordingly most illnesses the doctor will encounter will not be curable in the traditional sense and treatment will be directed towards symptomatic relief and disability reduction.

It is clear enough that the health needs of the American family will change and the physician who will service these needs will also change. His concern will extend throughout the medical life of a person. The emphasis will be on health maintenance and disease prevention. The family physician will combine in his person the private practitioners working also as a public health doctor.

The family physician will not work by himself alone. He will be part and leader of a health team. There will be a visiting nurse who will participate in health promotion, home care and she will perform screening examinations. Another important part of the team will be the social worker who will assist in history evaluation, environmental manipulation and who alone can coordinate community resources.

Is this just a dream or is it time for medical educators, family physicians and public health experts to begin thinking about the medical needs of the future and how physicians should be trained to meet these needs. At present the vision has not yet penetrated medical educators who are basic science oriented and who have not yet introduced a new full-time department of family medicine into the curriculum.

L.H.N.

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The Heart-Scare Syndrome

When a physician through statements, actions or treatment probably induced or aggravated a basic emotional instability state to produce functional cardiac symptoms such as dyspnoea, palpitation, chest-pain, dizziness, fatigue and general exhaustion, he has contributed to the development of the heart-scarce syndrome. Once symptoms of this type have occurred they of themselves can produce a vicious cycle of anxiety which convinces the patient that heart disease is actually present or at least imagined to be present.

Fear of heart disease or fear of death due to heart disease often basically occurs in patients who have other phobias and who are emotionally disturbed because of the phobic syndrome. Nevertheless Wheeler's studies[1] show that in half of the patients a heart scare did aggravate symptoms of already existing heart disease. He found that the highest percentage of anxiety, 77 per cent, occurred in a young person, female and not previously having been told of heart disease being present. This proportion was even higher if previous anxiety neurosis were added. Judging from these figures we must conclude that people with certain characteristic background, sex, and age, must be handled with especial care to avoid precipitating or aggravating anxiety symptoms. The physician must search for symptoms suggesting anxiety that existed long before the patient may even have seen the physician.

Keyes[2] and others have emphasized that physicians can be potent mobilizers of anxiety in patients. Very little stimulation from a physician's indecision is required to develop full scale heart-scare symptoms in a patient with a neurotic background and chronic anxiety states particularly if they have fears of cardiac disease. There may be misinterpretation by the patient of what the physician has said or gross exaggeration of what they have been told, which further arouses anxiety and leads to a worsening of the anxiety state. For example, by nonverbal communication, the physician's mannerism, prolonged auscultation and facial expressions may have a confounding effect. They serve to "tell" an anxious patient through his own suggestibility, that his worst fears about heart disease are confirmed. Furthermore if the patient is a neurotic who chances to gain some advantage through maintenance of maximum disability, he will unconsciously tend to exploit his scare symptoms.

Verbal communication is also a potent way of instilling or aggravating the heart-scare syndrome. A physician unskilled in the proper differentiation of chest pain due to coronary insufficiency, from myocarditis or referred ulcer pain, may unwittingly potentiate such a misinterpretation. Chest pain is extremely important to differentiate from coronary disease otherwise it could start a continuous vicious cycle of pain, fear, more pain, with additional anxiety symptoms, such as palpitation, dyspnoea, exhaustion. These will surely serve as "proof" to the person afflicted that heart disease is present.

Misinterpreting the electrocardiogram is another leading cause of anxiety mobilization in a patient. ST segment depressions and T changes caused by heightened sympathetic tone or of metabolic infectious or drug origin, have been misinterpreted as being caused by actual heart disease.[3,4] Even right bundle branch block which in some instances does not interfere with strenuous physical activity has been labelled heart disease.[5] Electrolyte depletion effects, and misinterpretation of exercise tolerance tests have also led the non expert to diagnose heart disease. Once anxiety is mobilized, additional symptoms of palpitation, dyspnoea, or exhaustion will most surely serve as proof to the person afflicted that heart disease is the cause. Then there may develop apprehension and symptoms of hyperventilation such as tremulousness, paresthesias, dizziness, sweating and palpitation. In short whether by nonverbal communication or diagnostic misconstructions especially in the anxious patient, the full blown symptoms of the heart-scare syndrome come into being.

The frequency with which the doctor contributes to the heart-scare syndrome is not easily determined. Hart[6] for example, has stated that there is no proof that what the physician actually may have said to the patient has precipitated the syndrome. He points out that symptoms were already present long before the patient may have seen his physician. Wheeler,[1] however, analyzing 162 patients who were inadvertantly advised that they may have heart disease found that such a suggestion seemed to upset and frighten almost half of his patients. but in persons free of symptoms of heart disease before, it did not lead to heart-scare, unless there was also a previously existing emotionally disturbed background. Of the 50 patients reported by Keyes[2] with obsessive symptoms, 13 not actually having heart disease, were diagnosed as having it. All had severe emotional disturbance, phobias, previous nervous breakdown. Nevertheless there were seven without obsessive signs who still were mildly influenced to a certain extent by disdiagnosis. There were also milder forms showing simple anxiety effects which had been present for years which had developed the heart-scare syndrome by misdiagnosis or patients misinterpretation of physicians actions and words.

Recognition of the physician's role in the genesis of the heart-scare syndrome offers some insight into how such patients must be managed. First of all the physician must be alert to the personality of the patient being treated. If the patient is young, female, with a history of anxiety or nervous breakdown or obsessive compulsive symptoms, the patient is suffering from an inner conflict which actually forms the framework for developing the heart-scare syndrome. Such a person is psychologically predisposed to develop the syndrome. Chambers[7] reminds us that in such a patient sypmtoms are protective and represent a natural defense mechanism against overwhelming anxiety and inability to meet life's demands upon his nervous system. In short the total personality must first be taken into account when any medical advice is given.

The next step is to have due regard for caution in what is said. Probably we cannot avoid misinterpretation by the patient. For he might just choose ideas and phrases to satisfy his inward need for the strengthening of his "symptoms." In fact misinterpretation is an event which itself helps to define for the physician the neurotic component in the heart-scare syndrome in the person who is fertile ground for its development.

Since the physician can be a potent mobilizer of anxiety in some patients, indecision on his part may be all that is required for the patient to develop the full state. If the physician realizes that the patient indulges in misinterpretations and irrational inferences from his discussion with the patient, then he must be careful to know the true diagnosis and speak with authority about his findings. There must be no room for doubts in physical findings, electrocardiographic interpretations. There must be no equivocal statements such as "you have a good heart with a little leakage, just take it easy." In short things should be stated clearly and with finality without evasion or mystery, which the suspicious patient especially quickly senses.

On the other hand the physician must quickly establish a rapport in which the patient trusts him.[8] He must express confidence, kindness, emanate patience and show genuine interest to help the patient cope with his problems. If the doctor finds he cannot fulfill these criteria it is better to refer him gracefully to another physician or psychiatrist. All these patients are a real challenge to our ability to establish rapport without which, reason and constructive suggestions are bound to fall on barren soil.

L.H.N.

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Further Note On Artificial Sweeteners

Abbott Laboratories, a principal manufacturer of cyclamate products, has taken sharp issue with a statement on the safety of artificial sweeteners in the September 11th issue (6:73) of The Medical Letter. Saccharin and cyclamate were originally intended for use only in special diets, but such products are now widely used by adults and children who have no need to restrict sugar intake (according to a trade report, the consumption of "low-calorie" beverages is expected to rise from less than 100 million cases in 1960 to about 200 million in 1964).

The Medical Letter stated that no harmful effects of the sweeteners had yet been observed. It expressed concern, however, over the fact that no studies had appeared on the effects of cyclamate in children as well as adults, or of the effects of the sweeteners on the human fetus or in persons with chronic disease. In the absence of positive evidence of the safety of these agents, it was felt that the extension of their use was against the public interest.

New Research—A press release issued by Abbott claims that The Medical Letter "ignores a significant portion of the research that has been done since 1955 to demonstrate further the safety and effectiveness of cyclamate." (The studies referred to have not been published, but the results were described by Abbott in a communication to The Medical Letter dated August 14) According to the press release, these studies show:

1. An absence of adverse effects of the artificial sweeteners "upon fertility, pregnancy, the fetus or the offspring" *in laboratory animals.*
2. "An absence of deleterious effects" in patients with impaired renal function "who received 5 Gm. [of cyclamate] daily *over a period of two weeks.*" [Our italics]

The Abbott press release and the communication to The Medical Letter also claim that "a large number of children" showed no untoward effects "attributable to the ingestion of cyclamate" in a study *still being analyzed;* that two studies show loss of weight by persons who substituted cyclamate for sugar; and that studies on "the fate of cyclamate in the body . . . indicate that cyclamate is not metabolized and is really excreted without pharmacologic action" (the conclusion that cyclamate has no pharmacologic action is refuted by the company's own data).

Saccharin and cyclamate may prove to be entirely safe in the amounts now being used and in the much greater amounts that will be used in coming years if the present trend continues. But the kind of evidence offered by Abbott does not establish the safety of prolonged used of large amounts in man, nor does it justify their substitution for sugar in a rapidly growing number of commercial foods and beverages and the promotion of their use for all sweetening needs in the home.

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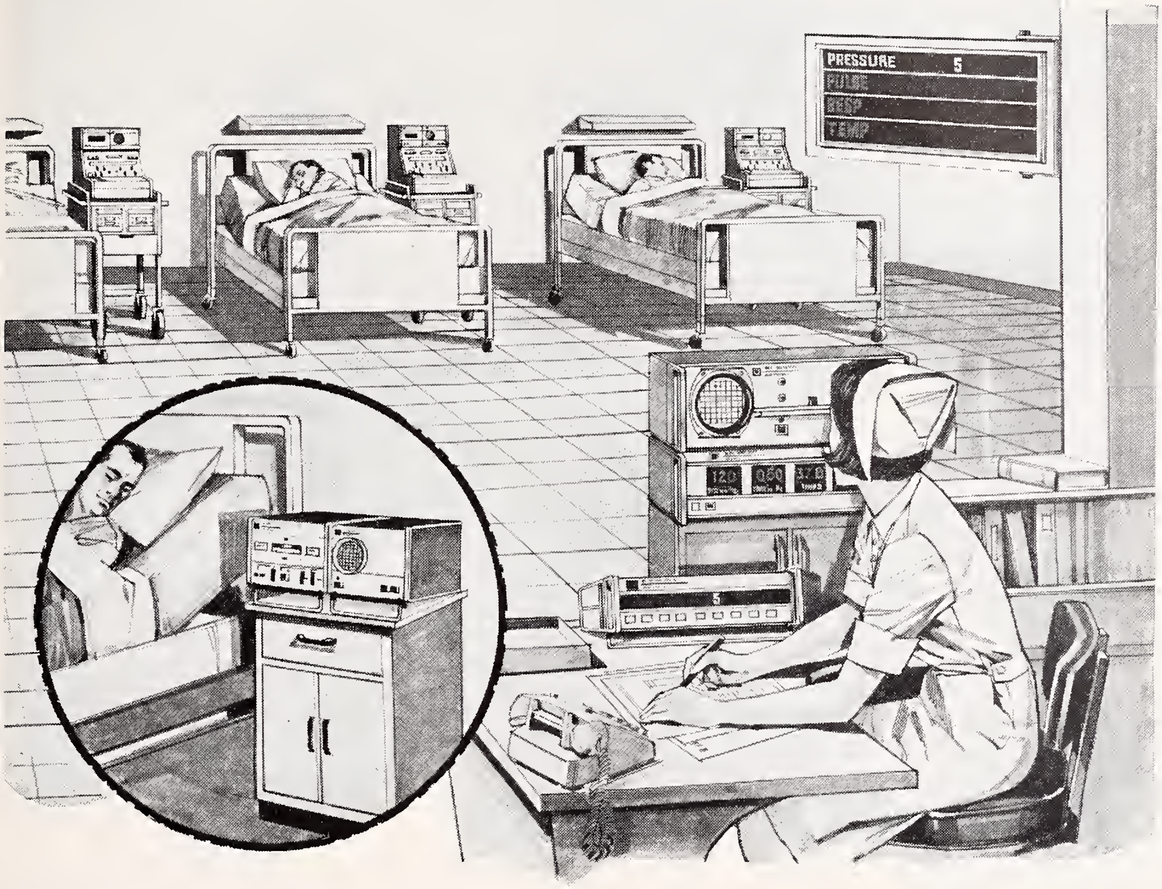

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Hypopituitarism As A Manifestation of An Hypothalamic Glioma

Gilbert B. Solitare, M.D. and Martin S. Nadel, M.D.

■ The occurrence of hypopituitarism in man as a secondary manifestation of an intracerebral lesion and with an intact pituitary gland has been reported rarely.[1-6] Yet both theory and animal experimentation clearly indicate the possibilities for such a clinical picture.[7-9] The present report concerns the finding of an oligodendroglioma among the hypothalamic nuclei in a 22 year old male whose initial and long standing symptomatology were indicative of pan-endocrine dysfunction, presumably due to pituitary insufficiency.

Case Report

J. B., a 22 year old, white, single male was first seen at the Yale-New Haven Medical Center in 1948 at age 8 with a one year history of listlessness and excessive weight gain. The impression at that time was exogenous obesity which was treated with diet and with amphetamine; however, he was lost to immediate follow-up and was not seen again at the Medical Center until late 1958.

During this interval he was seen irregularly by several physicians and treated irregularly for a "thyroid condition". Listlessness and obesity were a continuing problem. Secondary sexual characteristics did not develop. Throughout this period the patient complained of dryness of his skin, cold intolerance, weakness, lack of libido, and excessive thirst.

He was next seen at the Yale-New Haven Medical Center on 12/8/58 complaining of a "thyroid condition". Pertinent physical findings revealed a short, obese male with high-pitched voice, cool, coarse, dry skin, sparse body hair and immature genitalia. His thyroid was not enlarged to palpation. Aside from general muscular weakness, no abnormalities were noted on neurologic examination.

Laboratory data included a normal hemogram. Urine specific gravities varied considerably, but were generally low (1.001-1.015). Routine urinalyses were normal and specific studies yielded the following results: urine osmolarity –254 and 518 mosm/L (normal 300-1,000 mosm/L depending on fluid intake); urine Na+ — 52 meq/L, urine K+ — 22 meq/L, and urine Cl- — 40 meq/L. At this time, he still maintained the ability to concentrate his urine. Serum electrolytes were normal. A 24 hour urine showed an absence of FSH and 16 hydroxysteroids; with the 17 ketosteroids being 3.0 mgm per cent but rising to 11.5 mgm per cent after six hours infusion of 25 units of ACTH. Butanol extractable iodine determination was 3.0 gamma per cent. Serum cholesterol was 206 mgm per cent. An insulin tolerance test showed a drop from a fasting blood sugar level of 71 mgm per cent to 25 mgm per cent within 30 minutes with a simultaneous drop in the blood corticol level from 17.7 gamma per cent to 8.4 gamma per cent. These figures reflect a diminution in ACTH activity.

Bone age was estimated at 15 years. Other X-ray studies were negative or non-contributory and included normal skull X-rays and normal sella turcica series. Because of the suspicion of a pituitary tumor, perimetry studies were carried out, but no visual field defects were discovered. A testicular biopsy revealed immaturity with a total absence of spermatogenesis and decreased numbers of interstitial cells. He was discharged on 12/13/58 with a diagnosis of pan-hypopituitarism and on replacement therapy consisting of thyroid (125 mgm QD), cortisone (25 mgm QD), and testosterone (15 mgm QD).

He was followed in the Medical Clinic during the next six months after which time he was once again lost to follow-up. Repeated visual field examinations had been unrevealing. While on the replacement therapy he noted increasing alertness and the appearance of some pubic hair.

The patient returned to the hospital on 9/18/62, having discontinued his replacement therapy one month earlier. His weight, which had been at 168 lbs. in 1958, was now 192 lbs. His bodily configuration and appearance had not changed. Fundoscopic examination revealed bitemporal pallor for the first time and visual field studies disclosed a bitemporal hemianopsia, also for the first time. No other abnormal findings were noted on neurologic examination.

A lumbar puncture yielded clear fluid under normal pressure, but with a protein content of 76 mgm per cent and 174 RBC's/mm^3; no WBC's were seen. A pneumoencephalogram revealed dilatation of the lateral ventricles, greater on the left, with bulging of the septum pellucidum toward the right. A large, round, filling defect was present in the third ventricle extending superiorly and rostrally. Air was seen in the pontine cistern, but not the interpeduncular or chiasmatic cisterns. The radiographic picture was interpreted as that of a large suprasellar tumor extending upwards into the third ventricle.

Other laboratory studies gave a protein-bound iodine of 3.3 gamma per cent. His first-voided morning urine had an osmolarity of 214 mosm/L and after a 10 hours fast a value of 496 mosm/L with a specific gravity of 1.015.

On 10/2/62, a right frontal craniotomy disclosed a soft gelatinous, grey-red tumor mass in the region of the optic chiasm. A small portion of tumor was removed by suction. Histologic examination revealed a tiny fragment of adenohypophysis, a small piece of tissue consistent with neurohypophysis and some tumor tissue which, although ap-

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parently glial in nature, was thought to be inadequate for a definitive diagnosis.

His immediate postoperative course was complicated by a marked diuresis with outputs running as high as 9L/day with a specific gravity of 1.001. This was eventually controlled with pitressin administered at first intramuscularly, but later as a snuff. Radiotherapy, consisting of a total tumor dose of 4,500 r delivered by rotation technique, was given over a several week period. He was discharged unchanged on 11/2/62 on pituitary snuff, 9 alpha fluorohydrocortisone (0.1 mgm B.I.D.), cortisone acetate (12.5 mgm T.I.D.) and thyroid extract (1 grain B.I.D.). Testosterone had been discontinued.

While at home the patient slowly deteriorated, gaining more weight (208 lbs.) and having frequent episodes of dysosmia. On 1/5/63 he appeared at the Emergency Room of the New Haven Hospital complaining of nausea, vomiting, and somnolence. Physical findings were unchanged. Serum electrolytes were within normal limits. Shortly after admission he developed an unexplained fever of 102°F which continued until his death. Nose, throat, sputum, and blood cultures were negative or revealed normal flora.

A lumbar puncture on 1/11/63 revealed normal pressures but a protein of 400 mgm per cent with only 6 WBC's/mm^3. He began to have episodes of hypotension and tachycardia. A ventriculogram on 1/26/63 revealed xanthochromic fluid without increased pressure. He steadily, but very slowly, deteriorated into a semicomatose state. His CO_2 level rose from 25 meq/L to 34 meq/L but other electrolytes remained within normal limits. Another craniotomy on 1/31/63 revealed tumor tissue around the sella and optic nerves, which were atrophic. The histologic diagnosis on a small fragment was astrocytoma.

He died on 2/5/63 never having regained consciousness following the second craniotomy.

Post-mortem examination was performed 3½ hours after death. The body was moderately obese and had the configuration of a female with depositions of fat most prominent over the abdomen, shoulders, buttocks, and thighs. The extremities were relatively thin. There was no facial, axillary, or body hair with the exception of a scant amount of pubic hair, which had a feminine distribution. His penis measured 3.5 cm. in length. The right testicle could not be palpated, the left was very small.

Except for severe, acute, passive congestion, no abnormalities were noted among the viscera. The endocrine glands were not normal. The thyroid weighed 6.5 grams and revealed numerous small follicles containing smoothly surfaced colloid, with a lining epithelium of flattened, low cuboidal cells. No cellular infiltrates or fibrosis were evident. Two small, normal appearing parathyroid glands were noted. The thymus had apparently been replaced by fatty, fibrous connective tissue.

The right adrenal gland weighed 2.5 gms, and the left 3.0 gms. The medullae were intact and normal in appearance. The adrenal cortices were considerably reduced in size; the zona fasciculata being almost entirely absent, the zona reticularis being moderately reduced in size, and the zona glomerulosa having a normal appearance. The testes had a combined weight of 2.4 gms. The left testis was in the scrotum, the right in the inguinal canal. The usual elasticity of the semeniferous tubules was not demonstrable. Microscopic examination revealed a greatly thickened tunica vaginalis. There was no evidence of spermatogenesis, the tubules being lined by very prominent Sertoli cells. The interstitial cells of Leydig were greatly diminished in number with a corresponding increase in mesenchymal elements.

The head was cleanly shaven. A rubber ventricular catheter was present in the right fronto-parietal region wherein a bone flap had been turned. The brain weighed 1,500 gms immediately upon removal. No blood was present in the subdural space; however, the leptomeninges were markedly congested and small focal subarachnoid hemorrhages were seen over the cerebral hemispheres as well as the base of the brain. There was marked flattening of the gyri with narrowing of the sulci and marked uncal notching and cerebellar tonsilar herniation bilaterally. Grey-red, gelatinous tumor tissue was seen at the base of the brain in the subarachnoid space surrounding the optic nerves and optic chiasm, extending rostrally to the proximal portion of the olfactory nerves and caudally to the rostral pons around the basilar artery. No tumor tissue was seen in the sella turcica which was slightly widened, but otherwise intact. The meninges in this region were thickened, hemorrhagic and discolored red-brown. The pituitary gland was present within the sella, but was somewhat distorted and flattened, apparently by fresh and clotted blood.

Multiple coronal sections of the brain revealed the ventricular system to be partially distended with clotted blood. A small 2 mm in diameter hemorrhagic tract was present in the right frontal pole extending in the direction of the right lateral ventricle. An extensive region of hemorrhagic necrosis involving the right posterior parietal and occipital lobes from the cortical surface to the ependyma was found. The surrounding white matter was edematous and had a lemon-yellow appearance. Within the third ventricle and in the surrounding hypothalamic nuclei including the paraventricular, dorso-medial and ventro-medial nuclei and the infundibulum and tuber cinereum was a grey-red, gelatinous tumor mass which had extended through the floor of the third ventricle into the subarachnoid space (Figs. 1 and 2). After removing the clotted blood from the ventricular system, small elevations of grey-red tumor tissue could be seen on the ependymal surfaces of the lateral and fourth ventricles.

The microscopic picture of the tumor was relatively uniform, consisting of small cells with rounded, hyperchromatic nuclei without nucleoli surrounded by halos of empty-appearing cytoplasm. Silver stains revealed a paucity of cellular processes. No mucin was demonstrated in the cytoplasm. No mitoses were found. The tumor was identified as an oligodendroglioma. Necrosis and regressive changes were minimal and that seen could be attributed to the surgery and radiation therapy. These changes were manifested by a thickening of vessel walls in some regions within the tumor with an indistinct, eosinophilic, hyaline appearance. In these same regions occasional atypical giant nuclei were noted.

Varying numbers of astrocytes were seen among the tumor cells and, in some regions, small pools of an eosinophilic coagulum were noted among these elements. No calcifications were found. Focally, small fresh hemorrhages were seen.

Tumor tissue was present in the third ventricle and throughout the hypothalamic nuclei sparing only portions of the supraoptic nuclei. However, even in the paraventricular nuclei which were most severely involved, intact neurons

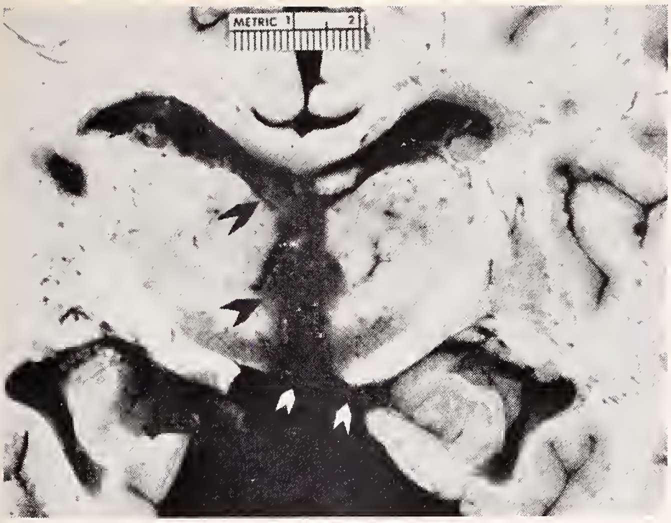

Figure I

Coronal section of the brain at the rostral end of the substantia nigra with tumor in third ventricle and surrounding hypothalamic nuclei and extending into the lateral ventricles and subarachnoid space. X1.

could be found (Fig. 3), although most had disappeared or were markedly atrophic. Tumor tissue was readily identified at the margins of the substantia nigra, within the infundibulum, throughout the tuber cinereum, in the subarachnoid space, as well as within the lateral and IV ventricles. The optic nerves were partially demyelinated and atrophic.

A partially flattened adenohypophysis was present with a normal component of chromophobe, eosinophil, and basophil cells revealed by special stains (Fig. 4). The intermediate lobe of the pituitary could be identified; however, the neurohypophysis was not identified and in its normal location were large numbers of pigmented macrophages, fibroblasts, and histiocytes of varied type. Fresh hemorrhages were also seen at the edge of the pituitary in the surrounding meninges.

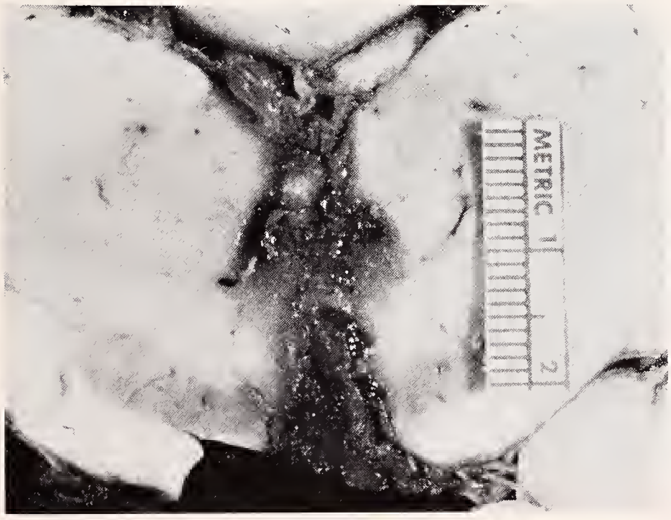

Figure II

Coronal section of brain as in Figure I. The tumor tissue blends almost imperceptibly into the hypothalamic nuclei and substantia negra. X2.

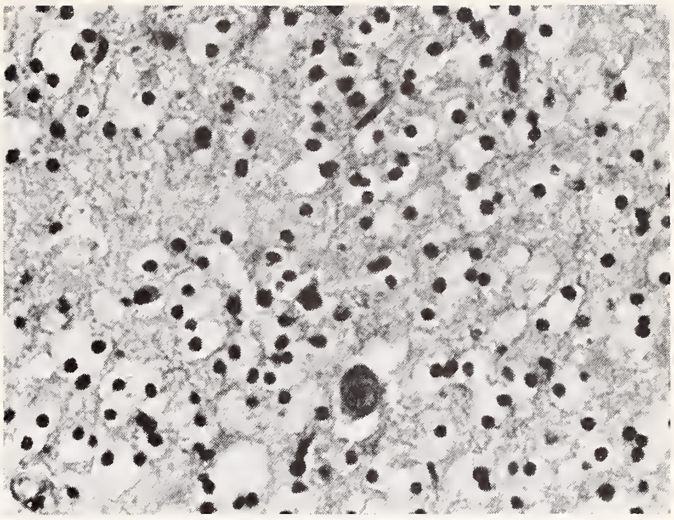

Figure III

Paraventricular nucleus of the hypothalamus with a surviving neuron surrounded by the cells of the oligodendroglioma. Haematoxylin and eosin. X300.

In the region of hemorrhagic necrosis found in the posterior parietal lobe, innumerable gitter cells were seen with swollen astrocytes, necrotic neurons, and necrotic oligodendroglia. Small fresh hemorrhages were also quite numerous.

Discussion

The manner in which the hypothalamus influences the anterior pituitary gland (adenohypophysis) is not fully understood. There is a very meagre nerve supply from the hypothalamus to the adenohypophysis, which is apparently of no consequence insofar as the regulation of pituitary function is concerned. The portal system of blood vessels which connects the tuber cinereum to the anterior pituitary gland is the pathway through which the hypothalamus mediates its control over

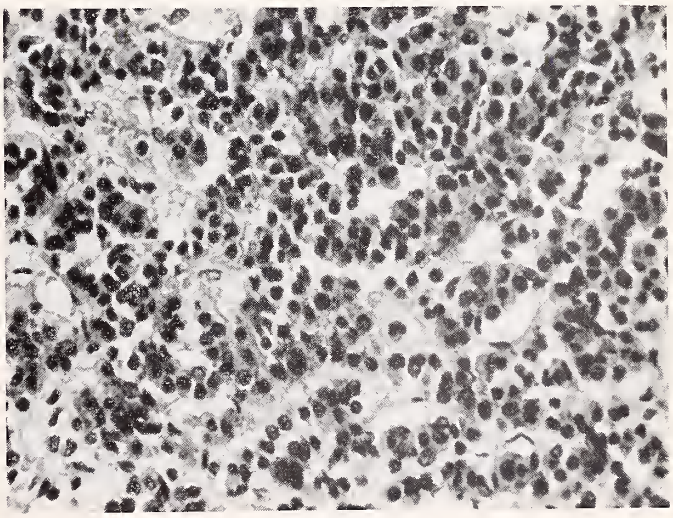

Figure IV

Region of normal-appearing adenohypophysis. Haematoxylin and eosin. X300.

the adenohypophysis. There is evidence that a humoral substance or substances is elaborated by the neurons of the hypothalamic nuclei and is conducted to the adenohypothysis via the hypophyseal portal system of blood vessels. The blood flows in these vessels from the primary plexus in the median eminence of the tuber cinereum through the infundibulum to the sinusoids of the anterior pituitary gland. The influence exerted upon the adenohypophysis is concerned with the release of its tropic hormones-gonadotropins, adrenocorticotropin, and thyrotropin.

Electrical stimulation of the hypothalamus may result in the production of various tropic hormones; however, direct electrical stimulation of the anterior pituitary gland is without effect. Adequate section of the infundibulum with insertion of inert materials to prevent regeneration of any connections between the sectioned parts results in a cessation or marked diminution in tropic hormone production. Studies have also demonstrated that transplantation of the adenohypophysis to a site distant from the sella turcica results in a marked diminution in its activity. All of these factors are cited by Harris[7] as indicating the dependent nature of the adenohypophysis upon the vascular connections with the hypothalamus for the maintenance of its normal functional state. In particular, he states that the anterior pituitary gland deprived of neural control shows only slight autonomous activity with regard to the secretion of ACTH and TSH, whereas the secretion of FSH seems to cease entirely. Furthermore, appropriately placed lesions in the hypothalamus may selectively effect the release of these tropic hormones. Although lesions of the pituitary gland may result in gonadal, adrenal, and thyroidal dysfunction, the functions of these glands may be similarly affected by lesions primarily in the hypothalamus in the complete absence of any apparent structural lesions in the pituitary gland.[1,2,6,9]

In our present case there was almost complete destruction of the tuber cinereum and most of the proximal infundibulum was infiltrated and replaced by tumor tissue. Correspondingly, the most profound hormonal deficiency was reflected in the lack of FSH production. Adrenal cortical and thyroid function were considerably impaired, but not absent. The neurohypophysis had probably been removed along with tumor tissue during the first craniotomy. A marked diuresis followed.

The lengthy duration of the patient's symptoms undoubtedly reflects the nature of the neoplasm. Oligodendrogliomas are notorious for their slow growth and long histories. In a series of cases cited by Elvidge, Penfield and Cone,[10] the average duration of symptoms prior to surgery was 11.7 years and in one case was probably 29 years.

Neoplasms are known to occur among the hypothalamic nuclei[1,2,11-13] and include glioblastomas multiforme, ependymal tumors, and astrocytomas. Colloid cysts occur in this region. There have also been found in this region metastatic tumors as well as tumors arising from the pituitary gland, both adenomas and craniopharyngiomas, and from the pineal gland. Gliomas of the optic chiasm may also exert an effect upon the hypothalamus. There are at least two reports[14,15] of oligodendrogliomas occurring in the hypothalamus, both, interestingly, in children, but without apparent endocrinopathy. The most frequent sign of hypothalamic involvement seemed to be modification of sexual function and development, either in the form of precocious puberty (hyperfunctional state) or in hypogonadism.[1,2,11-13] Apparently, the site of the lesion, not the nature of the lesion, is of prime importance; hypogonadism being associated with lesions predominantly in the inferior (tubero-infundibular) and more anterior region of the hypothalamus. Disturbances of thyrotropic and adrenocorticotropic hormonal activity[6] have been observed, but infrequently, among the clinical manifestations of hypothalamic disease; however, the usually normal appearance of the pituitary gland has been emphasized.[1,2]

Hypopituitarism with intact pituitary gland has also been reported[1-6] in rare instances in which the hypothalamus or the blood supply to the hypothalamic nuclei has been disturbed by aneurysms, sarcoidosis, encephalitis and, in one instance, a region of encephalomalacia of unknown etiology. Still other instances,[6] in which intracranial lesions not directly involving the pituitary gland and only indirectly involving the hypothalamus, have simulated primary pituitary gland disease include: internal hydrocephalus secondary to block in the aqueduct of Sylvius, arterio-venous malformation in the left cerebral hemisphere, meningioma of the floor of the anterior fossa, and mucocele of the sphenoid sinus.

Summary

The case history of a 22 year old male with a lengthy clinical picture of hypopituitarism is presented. Autopsy findings dislosed an oligodendroglioma primarily among the hypothalamic nuclei and an intact adenohypophysis. A brief discussion of hypothalamic-hypophyseal relationships is offered with correlations pertinent to the present case.

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Educational Reform In Medicine

Although much of the credit for the vast reform in medical education during the early years of the 20th century must be given to Mr. Abraham Flexner for his report on *Medical Education in the United States and Canada,* issued in 1910, one should recall that the Committee on Medical Education and especially the Council on Medical Education (created in 1904) of the American Medical Association were largely responsible for initiating the movement and for implementing the recommendations of the Flexner report. Arthur Dean Bevan, Chairman of the AMA Council on Medical Education from 1904 to 1928, wrote with pardonable pride in 1932: "As a matter of fact the American Medical Association deserves practically all of the credit for the reorganization of medical education in this country. It was at our request that Pritchett of the Carnegie Foundation agreed to make a report of our work as a special report of the Carnegie Foundation. Eighty percent of the Flexner report was taken from the work of the Council on Medical Education. We were, of course, very grateful to Pritchett and to Flexner for this work as it enabled us to put out of business the 22 homeopathic schools and 12 eclectic schools which were running at that time."—Fulton, J. F.: *Harvey Cushing, A Biography,* Springfield, Ill.: Charles C Thomas, Publisher, 1946, p. 379.

Delayed Effects Of Radium Absorption

A Follow-Up Study Of 275 Former Radium Dial Painters From Waterbury, Connecticut

Samuel D. Clark, M.D.

Introduction And Background

■ One of the minor marvels of the years before World War I was the watch with the dial that glowed in the dark. This novelty depended on the principle of zinc sulphide scintillation in the presence of a small amount of radium. This was incorporated into a paint that would adhere to watch and clock dials. Cheap watch and clock parts could be made by machine, but the painting of the dials had to be done by hand and a dexterous one to boot. Many a young Waterbury girl found she could earn a good salary if she was fast at her work. The best way to turn out a large number of dials was to make a fine point of the small camel's hair brush by drawing it between the lips or over the tip of the tongue, before dipping it into the paint. From the girls' point of view it seemed fortuitous that the paint did not leave a bad taste in the mouth. It was only a little gritty from the grains of zinc sulphide suspended in the mixture of gum acacia and water. The few particles of radium sulphate were tasteless, as were the varying proportions of mesothorium salts which were used in addition to the radium. The cheaper mesothorium with a half-period of 5.7 years would not last nearly as long as radium with a half-period of 1620 years, but who suspected or cared if an Ingersoll (the watch that made the dollar famous) glowed for a millennium. It wore out or was lost in a few years anyway.

The paint was dispensed by the supervisor in thimble size vials. The girls were discouraged from putting the luminous paint on their fingernails and earlobes, not because it was considered dangerous but because the paint was expensive. A few really wickedly bold lasses allegedly painted their front teeth to startle their boy friend of an evening. Many a mother was surprised to see her daughter's hair glowing at night from the dust that had accumulated at work in the clock shop. These were all interesting phenomena but they were not deemed alarming.

After World War I the great demand for self-luminous watches and clocks created many jobs for dial painters. These were mostly girls in their teens, and, if you lied about your age, you could sometimes get a job when you were 13 or 14. Some painted dials for years, others lost patience during the learning stage in a few days or weeks. The turnover in the dial painting department was high. But young or old, the dial painters continued to point the brush in their mouths. Radium, far from being considered dangerous, was believed to be a valuable addition to the pharmacopoeia. It was listed in New and Nonofficial Remedies as an intramuscular and intravenous medication as late as 1927.

In the early twenties came the first hints of trouble. Some of the girls we have been talking about were losing their teeth from an intractable type of pyorrhea. Others developed an osteomyelitis of the jaw following extractions. This was not at first associated with their occupation. In 1924 there were first suspicions and then flat statements that the unusual number of deaths of young dial painters in New Jersey was definitely linked to their work. Dr. Harrison Martland,[1] the chief medical examiner for Essex County, New Jersey, published a series of articles showing a frighteningly high incidence of fatal aplastic anemias in luminous paint workers. By 1926 it was generally agreed that the radioactive components of the paint were probably the cause of the deaths and strict injunctions were issued to stop the practice of tipping the brush in the mouth.

In 1929 Martland[2] reported the occurrence of two osteogenic sarcomas in two radium dial painters. Two years later, in 1931,[3] he had collected a series of 9 such cases.

Presented at the meeting of the Waterbury Medical Association, Waterbury, Connecticut, October 15, 1964.

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DR. SAMUEL D. CLARK, Associate Director, Medical Department, and Physician-in-Chief, Radioactivity Center, Massachusetts Institute of Technology.

This was all very well for the future but what about those who had been inadvertently ingesting radium and mesothorium compounds for weeks, months, and even years? What happened in New Jersey also happened in Connecticut. Waterbury, too, had its deaths, some of them quite horrible from sloughing maxillae and bone sarcomas. Another effect was the production of carcinomas of the paranasal sinuses, although so far this particular type of pathology has not been proven in any Waterbury case. All of these deaths were caused by essentially the same condition, namely, the deposition of radium and mesothorium in the bones.

The reactions at the time were understandable enough. At first, there was shocked disbelief on the part of the companies involved. There was no precedent in any industry for such delayed reactions. There was no legal liability since there was nothing in the statutes listing radium poisoning as a compensable disease, and in most instances the pathology developed long after the individual had stopped the hazardous type of work. Many firms, though not legally liable, did try to indemnify or take care of the more seriously injured.

There was panic among hundreds of the then active and former workers. The press published lurid tales of "the doomed girls". For a while one got the impression that there was no escape for anyone who had used radioactive paint. Then the publicity gradually quieted down. By the mid-thirties most persons had forgotten the matter or believed that everyone who had painted dials had already died. A few people knew otherwise; one of them was Dr. Harrison Ryder of Waterbury.

In 1932 Dr. Robley D. Evans, a young physicist at the California Institute of Technology in Pasadena, California, became interested in the problem of testing for the presence of and measuring the amount of radium and mesothorium in human beings. In 1934 he moved to Cambridge and the Massachusetts Institute of Technology, where he persistently continued his investigations, primarily as a scientific project. His instruments and methods of analysis[4] were the forerunners of the elaborate, fantastically precise instrumentation now used throughout the world.

While Dr. Ryder was seeing the aftereffects of dial painting at Waterbury, Dr. Evans was testing persons for radioactivity from a variety of places throughout the country. Many of them came to Cambridge for gamma-ray counting. Physicists, and a few physicians, were interested in Evans' work and the problem of radium poisoning,[5] but the great majority of medical men knew little or nothing of radium toxicity. If they had heard of it at all, they associated it with the more well-publicized external effects of radium's gamma radiation which produced burns on the skin.

Current Investigation

This was the picture until the U.S. Atomic Energy Commission realized that something should be done to try and find out what would be a safe level for fallout products such as strontium-90, not only now but 30 to 40 years from now. Because of the similarity of the metabolism of radium to strontium-90, it seemed wise to take a close look today at persons exposed to radium and mesothorium 30 to 50 years ago if we were trying to predict the effects of these similar bone-seeking elements over the next 50 years.

Almost overnight, these few hundred dial painters who had been all but forgotten, became the object of an intense study since they had unwittingly been the subjects (guinea-pigs if you will) of a mammoth experiment. The Atomic Energy Commission let it be known that no stone should be left unturned in tracing all of these cases and finding out what had happened to them. It was not strange that Dr. Robley Evans was one of the first people they should come to for an answer to their questions, and I quote from Eisenbud's book *Environmental Radioactivity*[6]:

> "The NCRP, on the basis of the work of Evans and others (Evans, 1943), proposed that the maximum permissible body burden of radium 226 be limited to 0.1 μC. The number of exposed individuals was not more than a few hundred. . . . If the relatively few cases of radium poisoning had gone unnoticed a decade earlier, or if they had not attracted the interest of Evans, the quantitative basis for the safe handling of bone-seeking internal emitters would not have existed."

There were several teams of investigators on the trail of these dial painters and among them was the Radioactivity Center at M.I.T., headed by Dr. Evans. In 1952 it was a very cold trail, indeed. Nearly 30 years had elapsed since the girls had stopped tipping the brush in their mouths. The task of finding these girls would have been almost impossible but for two very welcome breaks. The first was the cooperation given us by Dr. Harrison Ryder who had been looking after a number of women with varying degrees of difficulties allegedly due to the radium poisoning. When, I believe, he was convinced that we at M.I.T. were really trying to do a sound piece of work and that the last thing we wanted was a lot of publicity he introduced us to these patients. This was a starting point.

The next break came when the M.I.T. group gained access to all of the employment records of the old Waterbury Clock Co. or "The Clock Shop", as it was called. This file was a veritable gold mine of information, but even as ore has to be refined so did these records. We were reasonably sure of knowing the name of every girl who had worked in the room where most of the dial painting was done, but girls of 15 or 20 have a way of getting married with a change of name, and leaving home. How many of us could locate now girls who were in our class in grammar school or high school, particularly if they had dropped out when they were 15 or 16 years old ?

An Appeal For Help

In the past 10 years we have by various means found 275 out of a possible 407 Waterbury painters. We are pleased with these results but we are not satisfied. We are still looking for the other 132 and hope that Connecticut physicians may be able to help us. Some of the dial painters may have died and many of them from unrelated causes. Others have undoubtedly moved out of the state many years ago. On the other hand, we are confident that a goodly number are still living in the Waterbury area, quite unaware that anyone is interested in them. We believe that if they did know of our work, they would be willing to cooperate with us. You may ask "How could we help now?" "How could we spot a former dial painter if we saw one? What, indeed, is the effect of ingested radium on the human body?". If you were practicing in the 1920's you might have seen cases resembling a severe pernicious anemia, complicated by a necrosis of the jawbone. These began with a severe pyorrhea followed by a necrosis of the mandible, and more particularly, the maxilla, that sometimes led to an intractable osteomyelitis. This was fatal in 6 Waterbury cases. You might have found this condition 40 years ago since it occurred in persons who had absorbed a massive amount of radium resulting in a residual body burden of the order of 10 or more micrograms. This pathology tended to occur comparatively early, certainly within the first 10 years of the first exposure. You may have seen strange cases of spontaneous transverse fractures of the weight-bearing bones. A typical story was that of a middle-aged woman suddenly falling to the floor without any precipitating cause, but the X-ray showed a simple fracture of the femur. These breaks occurred somewhat later than the jaw necrosis, although there was some overlapping. The brittle tendency lasted for years and is present in some dial painters even today. Healing is usually quite prompt for the first fracture but subsequent ones show a tendency to nonunion.

There are two conditions which should definitely arouse your suspicion. One of these is osteogenic sarcoma in women over 55 years of age. This malignancy, when it occurs spontaneously, is a very rare bird with an incidence of something of the order of 1 in 200,000 persons per year. One usually thinks of it in young people and with a predilection for the knee area. The bone sarcomas induced by radium occur anywhere in the body and at any age, sometimes with a latent period of as much as 40 years after the first exposure. These you might very well see today. We know of 15 such cases from the Waterbury area alone and to date have studied 10 of them extensively. The latest case developed during the past year in a patient with a sarcoma of the frontal bone. After the appearance of this first primary lesion she has developed what is almost certainly at least one if not two other primary bone sarcomas, one in the pelvis and the other in the forearm. In Fig. I the destruction of the proximal head of the tibia by a sarcoma can be seen on the right.

Another tumor which you might very well come across in the Waterbury area is a carcinoma of the paranasal or mastoid sinuses. We believe the reason for these malignancies developing where they do may be in part due to the fact that these are areas where a thin layer of epithelium is in direct apposition to bone and within the 30-to-50 micron range of the alpha rays. When these tumors orginate in the sphenoid sinus they can produce ptosis, unilateral or bilateral, blindness, and deafness. These early symptoms show little that can be confirmed by way of X-ray findings. In the case of the mastoid, there may be erosion into and drainage from the external auditory canal.

X-ray Findings

Another means of spotting former dial painters might well be the X-ray of a skull or one of the long bones, since the X-ray appearance of radium poisoning is quite characteristic. As in many conditions, the more severe the poisoning the more striking is the picture. Conversely, the lower the body burden the more difficult it is to decide whether the osteoporotic areas are due to the presence of radium or to the normal aging process. It might be that a peculiar X-ray film could be the first clue since there may be prominent bone changes without any symptoms for many decades of the individual's life. We now know that many of these changes cause no difficulty at all and need be of no concern to the patient as far as her general health is concerned.

The advanced bone lesions of radium necrosis show themselves by X-ray as either multiple areas of dense bone calcification or the exact oppsite, namely, punched-out spots or rarefaction. We believe that the passage of many years is necessary to produce either picture. Let us consider a few typical

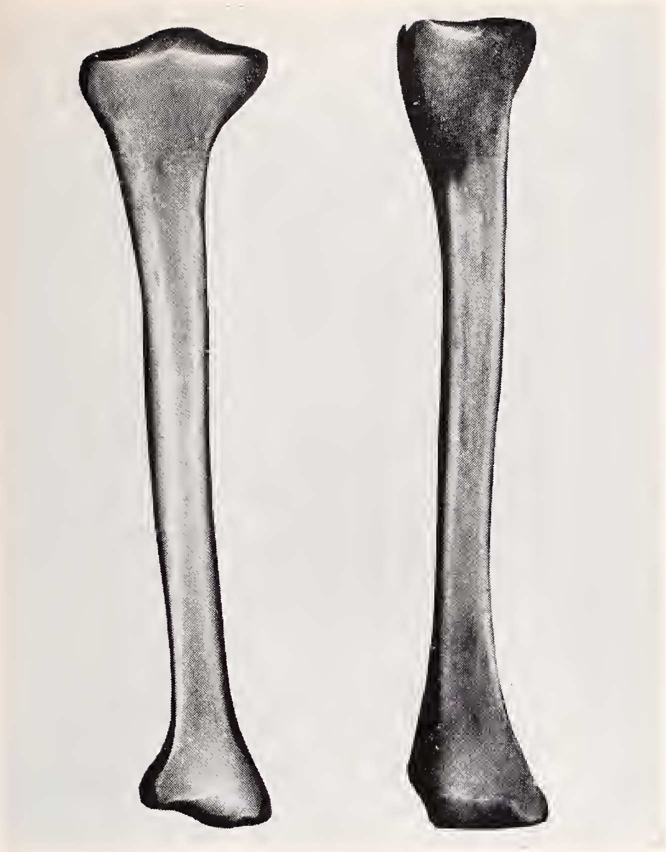


FIGURE I

Case 01-046, left tibia. Radium necrosis in a dial painter. Body burden = 0.55 μg Ra^{226}, MPRE = 4.5 μg Ra.

Case 01-099, right tibia. Osteogenic sarcoma in proximal head and radium necrosis of shaft. Body burden = 0.17 μg Ra^{226}, MPRE = 1.6 μg Ra.

views such as the tibias in Fig. I. You will note the moth-eaten appearance of both the shafts and the metaphyses. The areas of necrosis have their axis parallel to the long axis of the bone. They are in excess of 5 mm. in diameter. There is a slightly greater tendency to find them towards the ends of the bone rather than in the shaft. These radiolucent areas may be few and small in low-burden cases, or many and large in the higher ones. We believe that the lesion is caused not by the direct destruction of bone cells by the alpha particles but by the destruction of the blood supply to one or more of the Haversian systems.

There may be spots of what we call dense bone necrosis that are found in the more advanced cases though again this condition may be unaccompanied by any subjective symptoms. We think there has been a deposition of calcium in these areas similar to the calcification of a gland when the infection has long since died out. We know from autoradiographs that these dense areas in bone do not correspond to the areas of the greatest concentration of radioactive materials. We have found that there may be some tendency to healing and resorption of the necrosis, particularly in the mandible, after several decades but this is less apt to be the case in the long bones.

The skull is a favorite site for X-ray evidence of radium and mesothorium poisoning. There might at first seem to be some confusion with the picture found in multiple myeloma but there are definite

(*Continued on Page 576*)

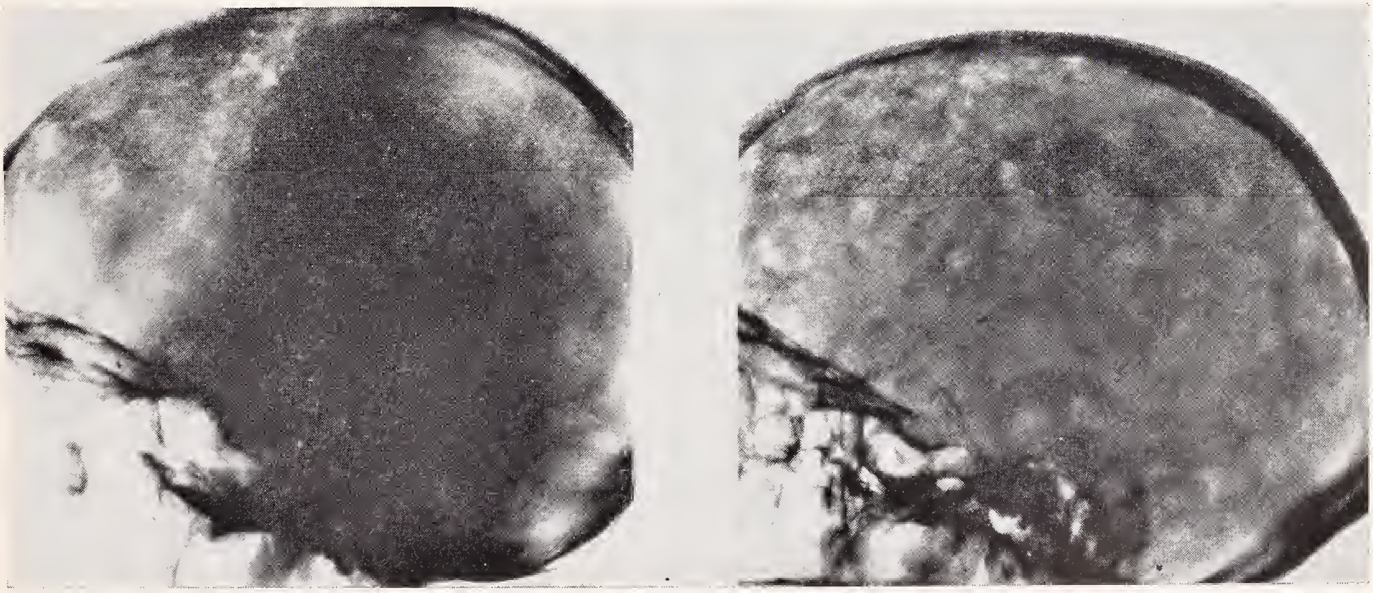


FIGURE II

Case 01-126, lateral skull. Minimal areas of radiolucent bone necrosis in frontal and parietal bones. Body burden = 0.19 μg Ra^{226}, MPRE = 1.60 μg Ra.

Case 01-080, lateral skull. Many areas of radiolucent bone necrosis in frontal, parietal, and occipital bones. Body burden = 0.083 μg Ra^{226}, MPRE = 1.13 μg Ra.

LOMOTIL *Pharmacologic Activity*

The significant pharmacologic actions of Lomotil are summarized as follows:

Evidence indicates that Lomotil acts directly on the intestinal musculature to inhibit excess peristalsis.

Lomotil is not known to inhibit nonpropulsive intestinal movements.

Roentgenograms demonstrate that this activity occurs within two hours after oral administration and persists for at least six hours.

Comparative studies in the rat show Lomotil to be more effective in inhibiting fecal excretion than either codeine or morphine.

Analgesic, anticholinergic, mydriatic and gastric secretory effects have not been significant.

Reduction of propulsive motility with Lomotil relieves spasm and cramping, allows physiologic absorption of fluid and reduces frequency of evacuations to provide prompt, symptomatic control of virtually all diarrheas.

LOMOTIL®

Each tablet and each 5 cc. of liquid contains:

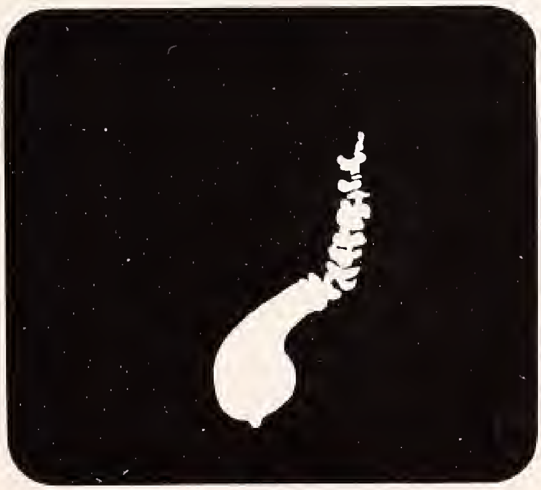
diphenoxylate hydrochloride (Warning: May be habit forming)	2.5 mg.
atropine sulfate	0.025 mg.

tablets • liquid

slows propulsion

relieves distress

stops diarrhea



Precautions: Lomotil is an exempt narcotic preparation of very low addictive potential: more than three million prescriptions have now been written for Lomotil. Recommended dosages should not be exceeded. Lomotil should be used with caution in patients with impaired liver function and in patients taking addicting drugs or barbiturates.

Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness and insomnia.

Dosage: For full therapeutic effect—Rx full therapeutic dosage. The recommended initial daily dosages, *given in divided doses,* until diarrhea is controlled, are:

Children:
3 to 6 months—3 mg. (½ tsp.* t.i.d.)
6 to 12 months—4 mg. (½ tsp. q.i.d.)
1 to 2 years—5 mg. (½ tsp. 5 times daily)
2 to 5 years—6 mg. (1 tsp. t.i.d.)
5 to 8 years—8 mg. (1 tsp. q.i.d.)
8 to 12 years—10 mg. (1 tsp. 5 times daily)

Adults:
20 mg. (2 tsp. 5 times daily or
2 tablets 4 times daily)

**Based on 4 cc. per teaspoonful.*

Maintenance dosage may be as low as one fourth the therapeutic dose.

Lomotil is a brand of diphenoxylate hydrochloride with atropine sulfate; the subtherapeutic amount of atropine is added to discourage deliberate overdosage.

SEARLE *Research in the Service of Medicine*

differences. The radiolucent areas in radium necrosis have less sharply defined edges, the outline is more irregular, and there are more gradations in the degree of porosity than in myeloma. (Fig. II). Paget's disease of the skull may superficially look like radium poisoning but most cases of the former disease will show the characteristic woolly cap appearance of this condition.

When the area of bone necrosis is near a weight-bearing articular surface there may be deformity of the joint with the consequent pain and disabilities suggesting arthritis. A few patients complain of joint pains and it is these arthritic symptoms that bring them to the doctor.

A spontaneous fracture of the bone such as the shaft of the femur is another characteristic of radium poisoning though this is unlikely to occur in the low-burden cases. These fractures have also occurred in the patella and the ankle bones in several instances. As noted earlier, the prognosis for healing in such cases is surprisingly good. We have a few patients who had successive spontaneous fractures and in these instances there were some cases of nonunion. For a more complete review of the symptoms and signs of radium poisoning the reader should consult the work of Aub, Evans, et al.[5]

Comment

We are primarily interested in dial painters who had some exposure to radioactive materials if only briefly before 1927. We take that date as a cutoff point since the practice of tipping the brush in the mouth was almost eliminated by the end of 1926. Thus far we have not found a single case of injury in the Waterbury group that had its origin after this date. Some girls engaged in the hazardous performance for years, others for as little as a few days. Some were more fastidious about putting the paint brushes in their mouths than others. For reasons we do not understand there was a great deal of variation in the amount of radium and mesothorium that was absorbed. This may account for the large number who with low body burdens are perfectly well today.

There were to our knowledge at least 6 who died of osteomyelitis of the jaw and 15 who developed osteogenic sarcomas. The most recent case occurred within the last 2 years but this woman has a body burden of 1.3 μg Ra MPRE* While there have been no demonstrable cancers of the paranasal sinuses in this series from Waterbury, we know from experience in other areas that there almost certainly must have been a few. The relationship to occupation probably was not suspected because of the long latent period. There were 14 spontaneous fractures which were due to radium necrosis that we know about. We wonder if other physicians may have seen others. The cases we have just described are all very striking and the malignancies are uniformly lethal. If we left it at that, the reader would have a very erroneous picture of what has happened to the hundreds of girls who worked at "The Clock Shop". The large majority are very much alive. They seem to be just as healthy as their non-dial-painting sisters. Their children are just as healthy as far as we can determine as anyone else's. The reason for this is the fact that the great majority of these women have, and presumably always did have, a very low body burden of radium or mesothorium. While this was in measurable amounts and up to ten or more times the level in the general population it is still well below the maximum permissible level of 0.1 μg radium, and even further below the level of 0.5 μg MPRE. This last amount is the lowest level we have found associated with any significant pathology.

It is the borderline group in which we are most interested, persons who are entirely symptom-free but who have some radium in their bones. If you know of any persons who painted watch dials before 1926, please let us get in touch with them (with their permission, of course). The first and often the only step is to have them breathe into two of our glass liter flasks. By measuring the radon in this expired air we can, with a high degree of probability, estimate the amount of radium still stored in their bones 40 years or more after their original exposure. If this level is 0.02 μg radium or higher they are invited to come to M.I.T. for more accurate measurements in our low background iron room. This is an all-expense-paid trip, which we feel was genuinely enjoyed by the great majority of the 75 Waterbury women who have accepted our invitation to date.

In the months to come, when you see a patient with any of the conditions we have been discussing, please bear us in mind. When you are taking a history in the case of a woman 55 years or older, a brief question about the possibility of dial painting might help you to a diagnosis and us with another piece of this jigsaw puzzle.

Summary

A report is presented concerning 275 persons who painted luminous watch dials in the Waterbury, Connecticut area from 1918 to 1930. It is believed

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* MPRE (minimum pure Ra equivalent) expresses the sum of mesothorium and radium dosages, in cumulative rad units, using 5.7 years for the half-period of MsTh, and assuming zero initial uptake of radiothorium.

that the ingested radium caused at least 21 deaths from osteomyelitis and bone sarcoma. The relationship of this study to the present problem of radioactive fallout is discussed and an appeal is made to help find other cases of exposure to radioactive materials during the 1920s.

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Dutch Janitor Discovers Microscopic World

A Dutch janitor and draper, Antoni van Leeuwenhoek (1632-1723), of Delft, had little knowledge of medicine and only a minimal exposure to formal education (The Bedellus of Delft, editorial, *JAMA* 177:860 [Sept. 23] 1961). Yet, his discoveries and inventions had a profound influence upon medicine, not only in his lifetime but even more so a century or two later.

His inquisitive nature concerning the minute world of protozoa and bacteria and his mechanical skill led to the construction of microscopes of such power that they revealed living creatures not previously visible to man. Through his invention, he was able to describe a great number of animate and inanimate objects. He discovered spermatozoa as a regular constituent of semen, contributing to an understanding of human fertilization and reproduction.

He also discovered the red blood corpuscle, the striped character of voluntary muscles, the structure of the lens of the eye, and a variety of microorganisms. He reported his findings in a steady stream of halting, ungrammatical letters to the English Royal Society, which eventually honored him by electing him a Fellow in 1680.

Showing no interest in medicine, Leeuwenhoek made no effort to correlate bacteria with contagion and disease. It was not until a century later that bacteriologists discovered this relationship and began to develop preventive measures.—Mirt, J. A.: "Medical Pathfinders on Postage Stamps," an exhibit.

Angiographic Appearance Of The Hufnagel Valve

Robert Shapiro, M.D. and Max G. Carter, M.D.

■ With the advent of aortic valve replacement, the Hufnagel valve[1] has passed into the limbo. There are, however, a number of patients who have had a Hufnagel valve inserted into the upper descending thoracic aorta. Because the authors are not aware of

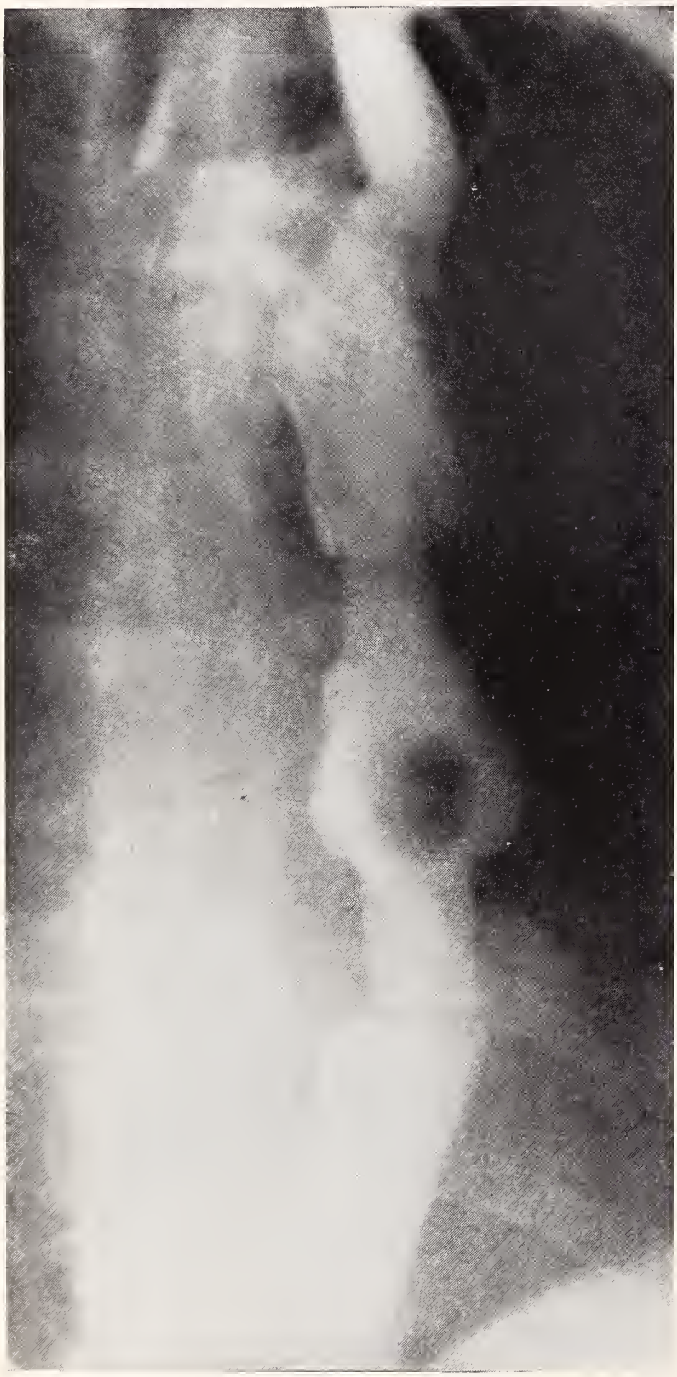

FIGURE Ia

Anteroposterior film in systole showing the radiolucent ball in the open position,

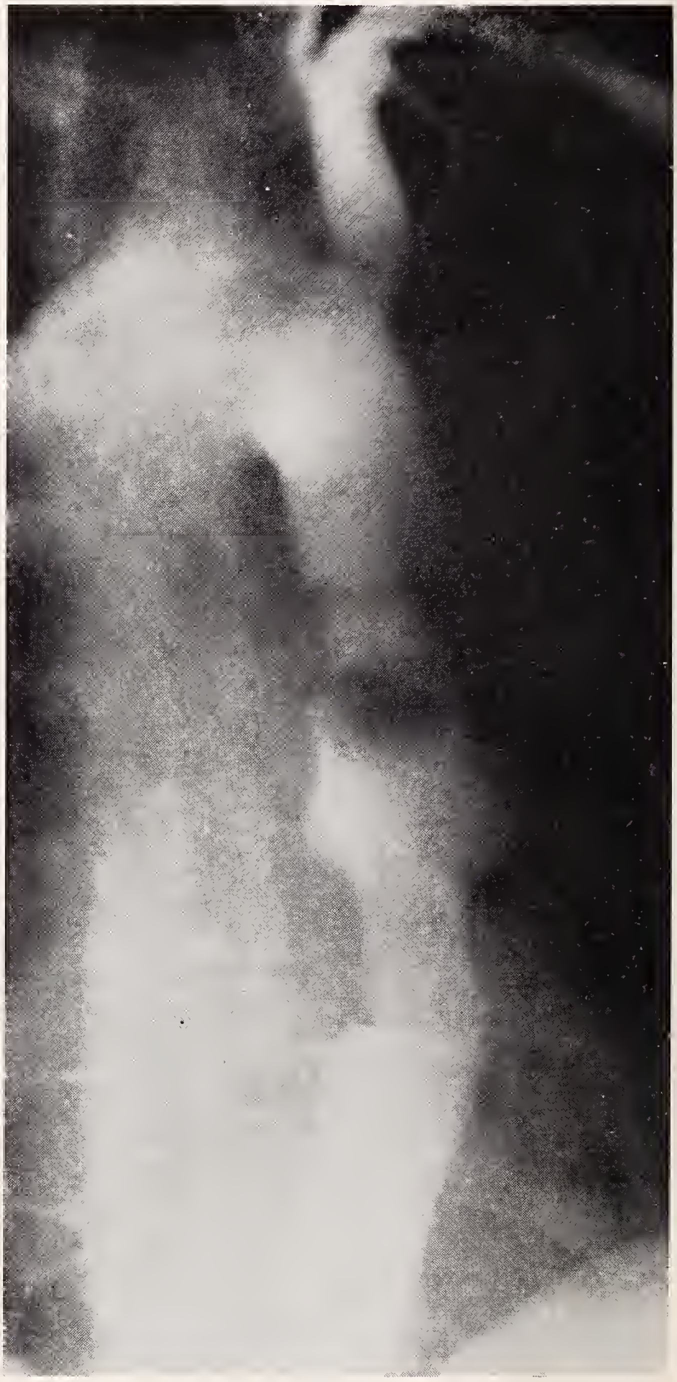

FIGURE Ib

Anteroposterior view in diastole with the ball seated more superiorly in the closed position.

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a description of the angiographic appearance of such a valve, the following case is deemed worthy of record.

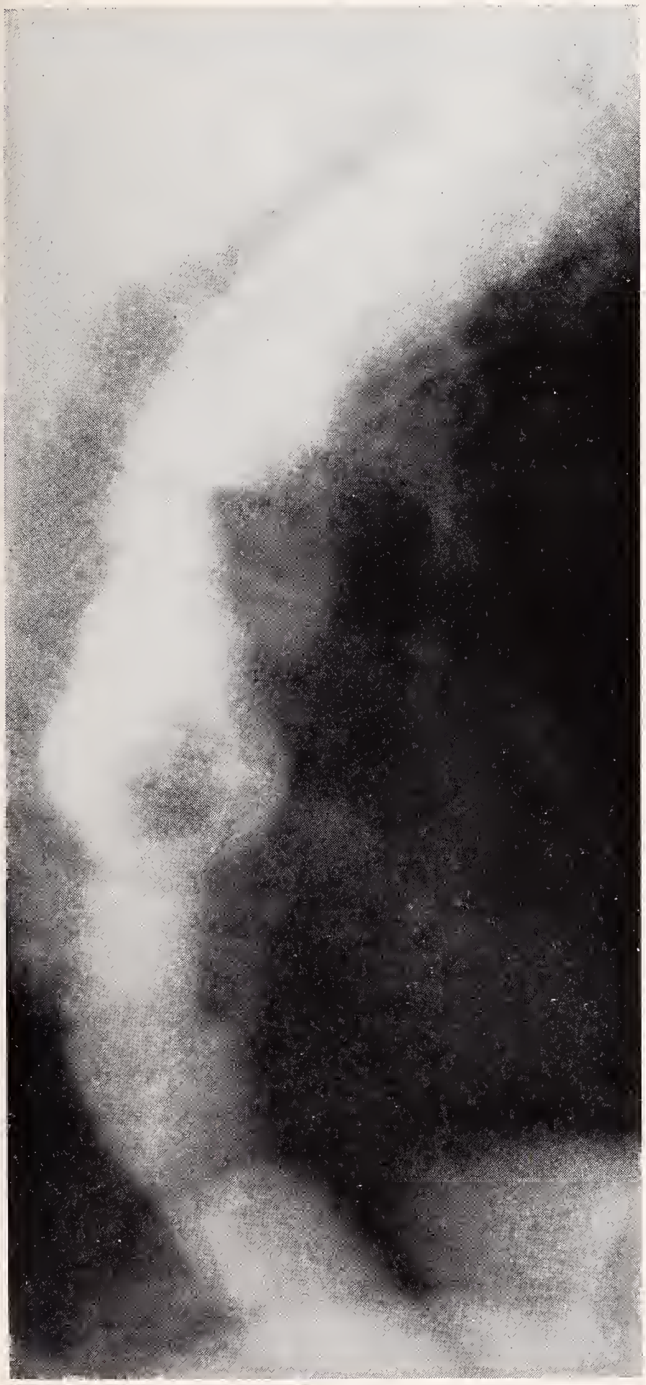

FIGURE 2a

Lateral radiograph in systole. The irregular appearance along the anterior and posterior walls of the superior surface of the prosthesis is a consequence of the surgical procedure. After resection of a portion of the descending aorta and insertion of the valve, a pad of gel foam was placed between the valve and the vertebral bodies. A band of dacron taffeta was tightly wrapped about the proximal and distal cut ends of the aorta overlapping the prosthesis to prevent dilation and minimize clot formation. The site of the valve insertion was covered by a pleural flap which had been reflected from the chest wall.

Case Report

G.D., a 44 year old white, married female had acute rheumatic fever at the age of 4 years. At 9 years of age, she began to have frequent nose bleeds which persisted until the age of 18 years. She remained relatively well until 35 years of age when the epistaxis recurred along with two flight dyspnoea, precordial pain and headaches. Physical examination at that time revealed a B.P. of 145/35 mm. Hg. with classical signs of aortic insufficiency. A Hufnagel valve was inserted into the descending thoracic aorta distal to the origin of the left subclavian artery on 8-15-55. The patient had a relatively uncomplicated recovery and was discharged from the hospital on 8-31-55.

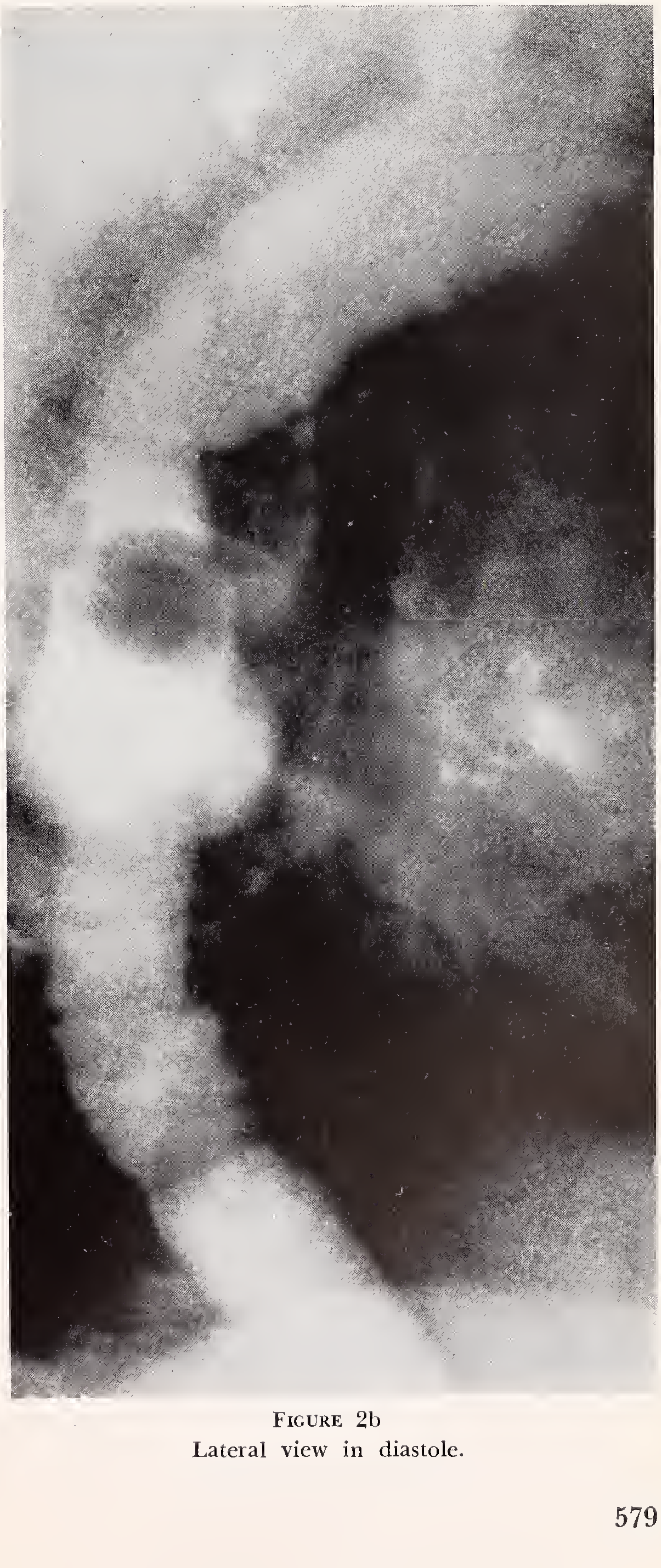

FIGURE 2b

Lateral view in diastole.

She remained well until September 1963 when she experienced an episode of back pain which radiated around both sides to the anterior chest. A similar episode of pain lasting six hours occurred at night two days before the September hospitalization. The evening prior to admission, the chest pain recurred and lasted from 8:00 P.M. until 2:00 A.M. When the patient was admitted to the hospital on 3-16-64 at 10:00 A.M., she stated that the heart valve sounded scratchy. At the time of admission, there was no angina or evidence of congestive heart faliure. The B.P. was 150/20 mm. Hg. Auscultation of the heart was difficult because of the loud noise made by the valve but an aortic diastolic murmur could be heard. The left radial and brachial pulses were absent.

Radiographs of the chest showed some left ventricular enlargement and dilatation of the ascending aorta which had not changed since 1955. Conventional and body section radiography of the thoracic spine was negative. In order to exclude aortic dissection, an angiogram was performed by percutaneous catheterization of the left axillary artery. Following the injection of 40 ml. of Conray 400 at a pressure of 3 kg./cm.^{2}, simultaneous anteroposterior and lateral projections were made at a speed of four films per second with the Schonander apparatus.

The chest pain which had subsided shortly before hospitalization did not recur. After thorough evaluation, the patient was discharged on 3-26-64 with an apparently stable cardiac status without an adequate explanation for the chest pain.

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Literary Taste

The temper of the time is unfriendly to independent literary judgment. We all lack leisure, for we tend to work longer hours than any but the proletarians of the past. And when we are not working at our jobs, the modern craze for good causes threatens our dwindling leisure; the once sweet voice of charity has risen to an imperious bellow. We pander to the ideal of Work as few Victorians did; university students are eager for holiday jobs, and few of them seem to know that in the beginning, university vacations were made long so the students spend them in reading which would augment their formal studies. Long toil and small leisure are part of the heavy price we pay for our North American standard of living. It is reputed to be the highest in the world, and so it should be, for it is bought at an inordinate price.

Part of that price has been the resignation of literary taste, by the intelligent reading public, into the hands of professionals, of experts, of an intelligentsia. I have no complaint against the existence of an intelligentsia; on the contrary, I favor it. But I do not favor a small, professional intelligentsia because the very nature of an intelligentsia is that it should be nonprofessional; belonging to it is not something at which anybody works.—Davies, R.: *A Voice From The Attic,* New York: Alfred A. Knopf, 1960, pp. 33-34.

Infectious Mononucleosis: A 1965 Viewpoint

David S. Fischer, M.D. and Stuart C. Finch, M.D.

■ During the past half century extensive research has failed to elucidate the nature of infectious mononucleosis and its etiology remains almost as much of an enigma as it was when first recognized. We wish to *briefly* review the history of this nosologic entity, the usual clinical and laboratory findings including some less commonly used laboratory techniques, a few aspects of modern treatment and a summary of recent research in this field. No attempt will be made to cover this material in depth, as any complete review would now require presentation in the form of a book.

Historical

The cases of idiopathic cervical lymphadenopathy reported by Filatov in 1885[1] usually are considered the earliest description of infectious mononucleosis. Pfeiffer's[2] classic description of the clinical picture of glandular fever (Drüsenfieber) received more attention and established the disease as a clinical entity, but the term infectious mononucleosis was first used by Baetjer in the discussion following a paper he coauthored[3] in 1915. In 1920, Sprunt and Evans[4] described the mononuclear leukocytosis and popularized the term infectious mononucleosis. Three years later, Downey and McKinlay[5] described the atypical lymphocytes. The period preceding these papers is regarded as the early clinical period in which the unitary character of the disease was emphasized. The period from 1920 to 1932 is considered the hematological period when the diagnosis was based largely on the blood picture. With the introduction of the heterophil antibody test of Paul and Bunnell[6] at the Yale-New Haven Hospital, the serological period began and the diagnosis was made more reliably.

Since 1932, cases of infectious mononucleosis have been described with all types of exotic and bizarre manifestations and the disorder has been considered a "protean" disease. This may have resulted from the habit of calling almost any undiagnosed condition infectious mononucleosis if there was either a suggestive clinical picture or blood picture with or without a positive serological test. In 1952, Bender[7] and Hoagland[8] simultaneously but independently suggested that the diagnosis be restricted to those cases with a characteristic clinical *and* hematological findings *and always* confirmed by a positive heterophil agglutination after the absorption studies advocated by Davidson.[9] If these criteria are strictly applied, Hoagland[10] believes that closely related diseases will not carry the label of infectious mononucleosis and that the clinical features will be quite characteristic and not at all protean. As long as the etiologic agent (s) is unknown, the mode of transmission obscure and a definitive diagnostic criterion still wanting, a scientifically reliable diagnosis cannot be made in every case. Therefore, although the strict clinical, hematological and serological requirements for the diagnosis are quite arbitrary, they are probably worthwhile in establishing a clearcut nosological entity. However, the requirement of a positive heterophil with absorptions in all cases remains controversial.[11]

Clinical Picture

The patient is usually an adolescent or young adult although the illness has been described in youngsters and rarely past age 40. The clinical course (of those who fall within the strict criteria previously mentioned) is reasonably uniform[12] with moderate variations in duration and intensity of symptoms and signs (Figure I). The primary presenting symptoms are pharyngeal in 80%, typhoidal in 12% and icteric in about 8%.[12] The incubation period remains unknown. The suggestion that oral kissing is the major method of transmission requires further evaluation.[13-15]

When first seen, the patient usually complains of easy fatiguability, malaise and anorexia. A low grade fever may be present which gradually rises over a period of several days to 102° F or 103° F. On occasion, we have seen it rise to 104° F, but this is uncommon. Headache, sweating and chilliness frequently accompany the fever and may increase in intensity for several days and then rapidly subside. Sore throat and dysphagia develop in about 50% of the patients in the first week, and in over 80% at some time in their course. Infection and edema of the pharynx and tonsils may vary

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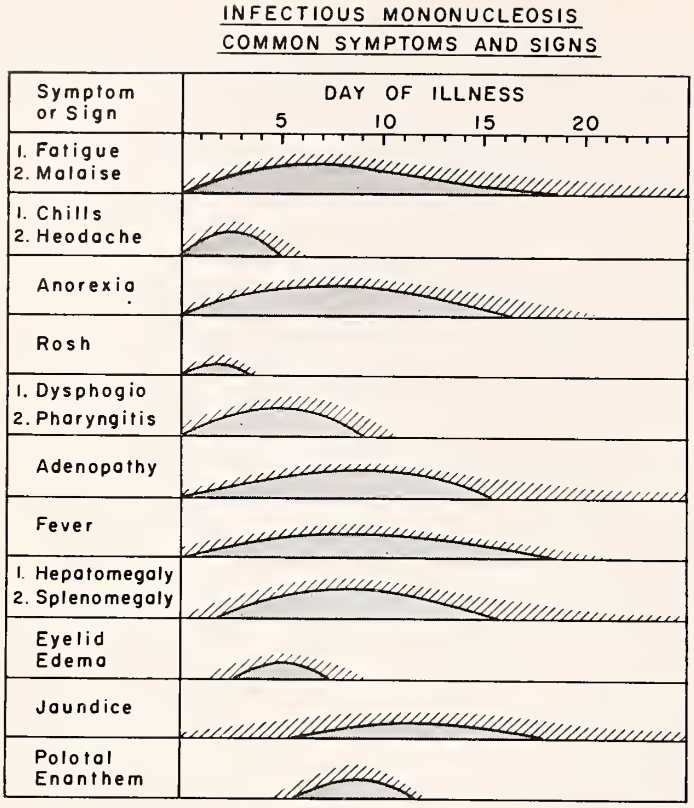

Figure I

The heavily shaded area represents the usual intensity and duration of abnormal laboratory findings. The cross hatched area represents the extremes.

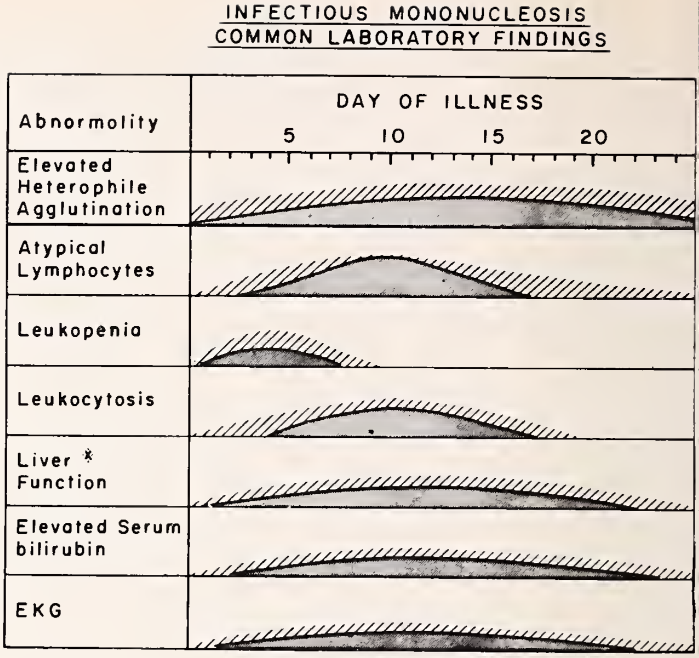

Figure II

The heavily shaded area represents the usual intensity and duration of abnormal laboratory findings. The cross hatched area represents the extremes.

* The liver function tests include G.G.O.T., S.G.P.T., L.D.H., alkaline phosphatase, cephalin flocculation, thymol turbidity and B.S.P. retention.

from indiscernible to a severe membranous ulceration which leaves a bleeding ulcerated area after it sloughs. Edema of the uvula and soft palate may occur, and periorbital edema develops in about 1/3 cases. The association of palatal petechiae with posterior cervical adenopathy is said to be almost pathognomonic.[16]

Modest hepatomegaly occurs in 40-50% and splenomegaly in 40-60%. Both organs are usually felt with difficulty 1-2 cm. beneath their respective costal margins during the second week of illness, but the spleen occasionally becomes greatly enlarged and then may remain palpable for weeks or months. Slight jaundice is seen in 8-10% of patients with infectious mononucleosis and usually lasts only a few days. A variety of other symptoms and signs have been reported, but most of these are non-specific and hence are of no value in the differential diagnosis.

Laboratory Findings

The peripheral blood changes vary somewhat with age, severity of illness and stage of illness, but in general, follow a characteristic pattern (Figure II). The total leukocyte count is usually normal or moderately reduced during the first week (although some patients present with a mild leukocytosis which persists throughout their clinical course). Toward the end of the first week or early in the second, a mild leukocytosis almost invariably develops and ranges between 10,000 and 15,000/mm.[3] and in a few patients reaches 20,000/mm.[3] This leukocytosis rarely is observed if leukopenia was present during the first week of illness.

More important than the total leukocyte count are the morphologic characteristics of the peripheral white blood cells. The most consistent finding is the relative and absolute increase in atypical lymphocytes. These have been classified as Downey cell types I, II and III.[5] Unfortunately, none of these cells is pathognomonic of infectious mononucleosis and each may be found with illnesses like agranulocytosis, toxoplasmosis, rubella, rickettsialpox, brucellosis, infectious hepatitis, listerosis and hypersensitivity reaction.[17] The frequent association of these cells with viral illnesses has prompted the suggestion that they be called "virocytes".[18]

During the first few days of illness only a few atypical lymphocytes may be identified in the peripheral blood. They increase however, in relative and absolute numbers and by the second week usually constitute 50% or more of the total peripheral leukocytes. Atypical lymphocytes have been identified in the cerebrospinal fluid[19] and in stained smears of the throat exudate where their presence may be of diagnostic value.[20] Bone marrow studies are rarely indicated as the differentiation from acute leukemia may be made accurately on good peripheral smears by the experienced hematologist.

Bone marrow smears show no characteristic findings of infectious mononucleosis. Histologic sections of the marrow, however, will show granulomatous change in about 50% of cases.[21]

Anemia is a rare complication, and when present, is usually due to a mild, self-limited, acquired hemolytic anemia. Approximately one-third develop a positive Coomb's antiglobulin reaction, frequently of the cold antibody type. Thrombocytopenia is equally rare, but when it occurs, may be severe and life threatening, lasting from 6 weeks to 6 months or more.[22] Rarely pancytopenia is associated with the presence of platelet and leukocyte agglutinins.[23]

A normal erythrocyte sedimentation rate in the presence of fever has been reported to be of importance in confirming a diagnosis of infectious mononucleosis.[24]

Serum heterophil antibody titers rise during the first three to four weeks in 60%[25] to 100%[12] of cases depending on one's criteria for the diagnosis. They usually decline gradually and approach normal in 8 to 10 weeks but may linger for 6 months to a year or more.[26] Elevated titers may be due to Forssmann antibody or serum sickness or some other disorder. The absorption tests with guinea pig or horse kidney and with boiled beef erythrocytes, serve to differentiate the other conditions with heterophil agglutinins. (See Table I).

Several alternate tests have been developed in an attempt to improve the sensitivity and specificity of serum antibody reactions. The ox cell hemolysin test has been reported to be just as sensitive as the Paul-Bunnell test but to be more specific, more rapid, to become positive earlier and to remain positive later.[27-29] In spite of these advantages, it has failed to gain widespread popularity and is used in relatively few centers. There is a satisfactory goat cell agglutination test,[30] an enzyme treated sheep erythrocyte test,[31] and a test utilizing guinea pig antigen absorbed test serum reacted with trypsinized beef erythrocytes.[32] Most recently, a promising fluorescent antibody technique has been reported utilizing snap frozen calf thyroid to absorb the antibody and fluorescent labeled anti-human serum to detect it. The technique is amenable to the classical absorption techniques, and can give a definitive result in 30 to 60 minutes in experienced hands.[33]

TABLE 1

		TITER	
TYPE OF ILLNESS	UNABSORBED	AFTER G.P. OR HORSE KIDNEY	AFTER BEEF ERYTHROCYTES
Infectious mononucleosis	1:56 to 1:7178	Same or slight reduction	Marked reduction → 0
Serum sickness	1:56 to 1:224	0	0
Other conditions, e.g., Forssmann antigen	1:7 to 1:112	0	0 or +

Table I:

The criteria for a positive test will vary from one laboratory to another, largely because of variations in the reactivity of batches of sheep cells.[68] In general, however, an unabsorbed titer of 1:448 (or higher) or a kidney absorbed titer of 1:28 (or higher) is consistent with a diagnosis of infectious mononucleosis.

Derangement of liver function tests has been reported in 85% to 100% of patients with infectious mononucleosis, indicating some evidence of hepatitis in virtually every case.[34-40] The most sensitive indicators of acute hepatic damage are the lactic dehydrogenase (L.D.H.), serum glutamic pyruvic transaminase (S.G.P.T.), serum glutamic oxalacetic transaminase (S.G.O.T.), cephalin flocculation, isocitric dehydrogenase, alkaline phosphatase, phosphohexose isomerase, aldolase and the bromsulphthalein (B.S.P.) tests in approximately that order.[41,36-39] Abnormal liver function tests are of value in differentiating infectious mononucleosis from acute tonsillitis, respiratory infections and rubella, but the differentiation of infectious hepatitis is still a problem, although specific hemagglutination tests for that disorder were once popular[42,43] but have since proven disappointing.

Minor electrocardiographic abnormalities have been reported associated with infectious mononucleosis. However, in our experience, these are not specific and certainly do not contribute to the diagnosis.

As we have already indicated, the diagnosis of infectious mononucleosis relies on several key laboratory determinations. All too often the diagnosis has been made in the absence of convincing laboratory data, but recently it has been made solely on the basis of a positive heterophil[44,45] without a supporting clinical picture or even a typical peripheral blood smear. While it is purely arbitrary to define the disease in terms of the typical clinical, hematological and serological parameters we have outlined, it will probably be less confusing and more accurate to do so until such time as the etiology of infectious mononucleosis is definitely established. At the moment, we are in the position that Wasserman might have had to face if he had recognized the clinical picture of syphilis and associated it with his serological test before the Treponema pallidum organism was discovered.

Course

While most patients make a prompt and complete recovery within a few days following defervescence, lethargy and weakness may occasionally persist for weeks after a severe and prolonged episode. This is particularly true when there is little incentive to recovery or secondary gain associated with illness, or when the physician has suggested that the illness will be prolonged. In such cases, evaluation of liver function tests is one of the more reliable guides to the extent of recovery.

Rupture of the spleen is the single most serious complication and usually occurs during the second or third week of illness if it happens at all.[36,46] About 40% are spontaneous in origin and the remainder are associated with trauma which is usually minor, perhaps as minor as an aggressive, overzealous physical examination. If recognized promptly, surgery usually is curative, but about 15 of the 50 cases reported have terminated fatally. Occasional deaths have been associated with laryngeal obstruction or respiratory paralysis, but these must be extremely rare. Many non-fatal complications have been reported, and these are listed uncritically in Table II. We wonder whether the diagnosis of infectious mononucleosis would stand close scrutiny in many of these cases. Relapse or recurrence of infectious mononucleosis has been documented in less than half a dozen cases.[26,47,48] The diagnosis of many patients thought to fall in this category has probably been due to an illness with a similar clinical picture which triggered a fortuitous anamnestic heterophil response.

TABLE II
REPORTED COMPLICATIONS OF INFECTIOUS MONONUCLEOSIS

GENERAL TYPE OF COMPLICATION	SPECIFIC PROBLEM
Neurologic	Meningismis, meningitis, meningoencephalitis, encephalitis, peripheral neuritis, acute polyneuritis, peripheral neuropathy, encephalomyelitis, encephaloneuronitis, primary optic neuritis, transverse myelitis, cerebellar ataxia, hyperesthesia, seizures, mental confusion, psychotic reaction, coma, Bell's palsy, facial diplegia.
Hematologic	Acquired hemolytic anemia, thrombocytopenia, pancytopenia, splenic rupture, eosinophilia.
Cardiac	Pericarditis, myocarditis, electrocardiographic changes of ischemia.
Respiratory	Pleuritis, virus pneumonia, interstitial pneumonitis, pleural effusion, laryngeal obstruction, pharyngeal edema.
Digestive	Hepatic dysfunction, hepatic necrosis, portal hypertension, esophageal varices.
Renal	Nephrotic syndrome, hematuria, hemoglobinuria, proteinuria, porphyrinuria.
Ocular	Retro-orbital pain, nystagmus, scotomata, ptosis, diplopia, optic neuritis, hemianopsia, eyelid edema, conjunctivitis, uveitis, lacrimal pericyclitis, retinal edema, retinal hemorrhage.
Laboratory	False positive serological test for syphilis, Widal test for typhoid, agglutination for Brucella melitensis, skin test for trichinella.
Other	Orchitis, pancreatitis, thyroiditis, nephritis, vaginitis, endocervicitis, skin rashes.

Treatment

Although no specific form of therapy is available, bed rest is advisable during the febrile period. Patients are not isolated. Perborate or saline gargles and the judicious administration of salicylates may be useful in symptomatic care. Following defervescence patients are ambulated for several days before normal activity is resumed. Contact sports and extreme forms of physical exercise are avoided until a few weeks after splenomegaly has disappeared.

Extremely painful pharyngitis, impending or actual pharyngeal obstruction and severe neurological involvement have been treated effectively with corticosteroids[49,50] but such therapy is rarely necessary for more than a few days. Longer periods of corticosteroid therapy may be necessary in cases of persistent hemolytic anemia or thrombocytopenic purpura, but most often, these complications are self-limited and require only supportive therapy and patience.

Recently, chloroquine has been used in the treatment of two small series of patients with results that impressed the reporting physicians.[51,52] However, a large double blind study of therapy with a placebo, aspirin, chloroquine, prednisone and an untreated group failed to demonstrate any benefit in treatment of the basic disease[53] with the possible exception of intravenous steroids. In view of the lack of evidence of its efficacy and the toxic hazard of chloroquine, particularly its ophthalmic toxicity[54] it should not be used in a mild self-limited disease like infectious mononucleosis.

Recent Research Progress

Although the heterophil antibody has been known to be a gamma globulin[55] this fact has failed to explain the false positive results due to cold agglutinins that are frequently seen.[56] Now that we know that cold agglutinins are 19 S macroglobulins,[57] and that the heterophil antibody is also a macroglobulin,[58,59] efforts are underway to isolate these proteins and study their mechanism of action, specificity and modes of cross-reaction in greater detail.

Of the many attempts to transmit infectious mononucleosis from man to man or man to animal, none has been completely successful.[60] A few investigators produced illnesses which bore some resemblance to infectious mononucleosis and then could not reproduce the feat. Nonetheless, it is generally agreed that this is an infectious disease and at one time or another, Listeria monocytogenes,[61] Rickettsia sennetsu,[62] Toxoplasma gondi,[63] Sendai virus[64] and others have been implicated as the responsible agent. So far, the evidence for all these agents has been unconvincing, but most of us still believe that a virus is involved.

As a byproduct of electron microscopic studies of possible viral agents associated with human leukemia, a myxovirus-like particle has been identified in high concentration in either the plasma or serum of the 12 children with "infectious mononucleosis" studied[65] (the quotation marks are used because only six of the children had a positive heterophil agglutination test). Similar virus particles were seen in 19 of 24 children with acute leukemia and in 12 of 60 healthy children but in none of 13 healthy adults studied with identical techniques. The presence of the virus in normal children is not unexpected as a reservoir of asymptomatic carriers is common with some viral diseases. The same group of investigators found that bone marrow cells from 2 children with infectious mononucleosis when maintained as fibroblastic tissue cultures, underwent a spontaneous lymphoblastoid transformation.[66] These cells actively multiplied and cytologically resembled the immature cells seen in direct smear aspirates of children with acute leukemia.

Another group has reported that a transmissible agent with a characteristic cytopathogenic effect has been isolated in tissue culture from the serum of patients having infectious mononucleosis.[67] The positive cultures were confirmed by three serial passages, and the authors believe that the agent is distinctly different from the virus of infectious hepatitis. If this is confirmed by independent tissue culture studies and human transmission experiments, then the causative agent may finally be identified. With this information, more appropriate diagnostic tests could certainly be developed and perhaps even a prophylactic vaccine. Finally, the riddle of infectious mononucleosis might become less of an enigma.

Summary

The history, clinical, laboratory and therapeutic aspects of infectious mononucleosis are reviewed. The diagnosis is most firmly established in the presence of a characteristic clinical, hematological and serological picture, and under these circumstances, it is usually not a "protean" disease. Recent studies of a myxovirus-like particle by electron microscopy, and of an agent transmissible in tissue culture, give us hope that the definitive demonstration of the etiologic agent is close at hand.

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THE PRESIDENT'S PAGE

The Time For Unity

Time goes by in the halls of Congress and, at the moment of this writing, the Medicare Bill, HR6675, has been passed by the Senate with amendments and is now in the hands of the House and Senate Conference Committee. Although organized medicine still hopes that this bill will not become law, it appears inevitable at this time that it will pass both the Senate and the House and be signed into law by the President before Congress adjourns for this session.

At the American Medical Association's annual meeting in New York this June, the House of Delegates heard resolutions presented by delegates from several states, including Connecticut, which in essence stated that many doctors would be unwilling to abide by Medicare regulations if the law was passed. These resolutions were not passed by the House of Delegates which in its wisdom adopted a "wait and see" policy. This writer is not in agreement with any boycott which involves the care of patients nor is he in agreement with any means that would abrogate or dilute a law of this land. He believes that every physician should listen well to the words of AMA President Doctor James Z. Appell in which he stresses the five responsibilities which must be met by the nation's physicians if the Medicare bill becomes law. These are:

1. To continue to provide the highest quality of care to all Americans.
2. To take part in formulating the rules and regulations of the program, if it becomes law.
3. To participate in the actual implementation of the legislation, if it becomes law.
4. To "contain" the law so that it cannot be broadened by Congress as an election-year vote-getting measure.
5. To develop support for amending the legislation so that it approaches the Eldercare plan.

These statements point out that the physician should help to develop the best parts of Medicare and work to eliminate the poor ones. Doctor Appel is also calling for unity in the medical profession, which so many of his predecessors tried in vain to attain. He emphasizes, and I strongly advise the physicians of Connecticut, that it is time for all of us to be knowledgeable of Medicare legislation and to work together for the good of our patients. This is not the time for radical thinking or for non-cooperation. It is the time for frank analysis of where we stand as physicians and what is expected of us.

If Medicare becomes law, it must be given a fair chance and, by evaluation and amendment, made a worthwhile instrument for paying the medical expenses of the people whom we treat and who expect the best of everything under our democratic form of government.

James R. Cullen, m.d.

FORTIETH CONNECTICUT CLINICAL CONGRESS

OF THE CONNECTICUT STATE MEDICAL SOCIETY AND THE YALE UNIVERSITY SCHOOL OF MEDICINE

Yale-New Haven Medical Center — Mary S. Harkness Memorial Auditorium
333 Cedar Street, New Haven, Connecticut

Friday, September 24, 1965

9:00 Registration (Coffee will be served in the lobby until 9:30)

Morning Session

9:45 Welcome and Opening Remarks—
James R. Cullen, *President, Connecticut State Medical Society*

ADVANCES IN THE TREATMENT OF INFECTIONS

Elisha Atkins, *New Haven, Presiding*

10:00 Bacterial Infections.
Abraham I. Braude, *Pittsburgh, Pa.*

10:30 Viral Infections
Edwin D. Kilbourne, *New York, N.Y.*

11:00 Panel Discussion
Moderator: Elisha Atkins, *New Haven*
Panelists: Abraham I. Braude—Edwin D. Kilbourne
Vincent A-T. Andriole, *New Haven*
Dorothy M. Horstmann, *New Haven*

11:45 Intermission

John C. Leonard, *Hartford, Presiding*

12:00 Clinical Pathological Conference
Pathologist: Marvin Kuschner, *New York, N.Y.*
Radiologist: Gilbert S. Melnick, *New Haven*
Discussant: Jacob Fine

1:00 Luncheon

Afternoon Session

ADVANCES IN THE TREATMENT OF SHOCK

William W. L. Glenn, *New Haven, Presiding*

2:30 Cardiogenic Shock
Myron H. Luria, *Chicago, Illinois*

3:00 Shock Due to Infection
Jacob Fine, *Boston, Mass.*

3:30 Hemorrhagic and Traumatic Shock
Richard C. Lillehei, *Minneapolis, Minnesota*

4:00 Panel Discussion
Moderator: William W. L. Glenn, *New Haven*
Panelists: Myron H. Luria—Jacob Fine—Richard C. Lillehei

COME FOR THE WEEKEND—Attend the Clinical Congress on Friday, and the following activities on Saturday, September 25th, Surgical and Medical Grand Rounds at the Yale-New Haven Medical Center on Saturday morning and the University of Connecticut-Yale Football game on Saturday afternoon. Tickets may be obtained from the Yale Athletic Association, Yale Station, New Haven.

Luncheon for visiting physicians will be served in the cafeteria of the Grace-New Haven Community Hospital.

The registration fee of $5.00 provides for admission to all sessions of the Congress. Hospital residents and interns and medical students will be admitted without charge, if a statement of their position, signed by an official of the hospital or school, is presented at the registration desk.

PLAN NOW TO ATTEND

Clinical Medicine

Committee On Maternal Mortality And Morbidity

Postpartum Cardiac Arrest

From the Committee on Maternal Morbidity and Mortality, Connecticut State Department of Health.

This 33-year-old colored multipara was admitted at term in active labor with the breech presenting at the introitus.

Obstetrical History

Three uneventful pregnancies and deliveries—one, two and three years ago. The medical history is non-contributory.

Present Pregnancy

The patient's first office visit was in her sixth month of pregnancy, and a complete physical at this time was entirely normal. The patient was seen at monthly intervals thereafter, and the prenatal course was uneventful, with weight gain, urinalysis and blood pressure remaining within normal limits. The Rh was positive and the serology negative. The last office visit occurred three weeks before hospitalization.

Hospital Course

The patient was admitted in her 38th week of pregnancy at 6:00 P.M. on the 24th of April with the breech crowning and was delivered in bed of a living 2948 gm. male infant. The delivery was complicated by extension of the arms and was described as being moderately difficult. The placenta was expressed twenty-five minutes later. The estimated blood loss was 250 cc. Because of a second-degree laceration of the perineum the patient was taken to the delivery room and a routine repair was performed under local anesthesia. During the immediate postpartum period the patient's condition was considered to be excellent, with the absence of unusual vaginal bleeding and with normal vital signs. The blood pressure was 120/80 and the pulse 80 per minute and of good volume.

During the night, moderate vaginal bleeding was observed by the nurse in attendance, and toward morning this became more pronounced, with the passage of several large clots, and the pads were changed every half hour because of saturation. The vital signs, however, remained normal and, therefore, the attending physician was not notified.

At 11:00 A.M., approximately seventeen hours postpartum, because of continued vaginal bleeding, the physician was *finally* notified. At this time the blood pressure was 100/68 and the pulse was 104. An emergency blood count, and type and cross-match of two pints of whole blood was ordered. The blood count revealed a hemoglobin of 10.6 gm., RBC of 2.7 M., and a hematocrit of 29. A glucose infusion was started and 500 cc. of whole blood was given as soon as it was available.

An hour later a pelvic examination was performed which revealed moderate vaginal bleeding, a well contracted uterus, and palpable tissue within the cervical canal. The blood pressure was recorded at 120/80, pulse 104, and persistent vaginal bleeding was apparent.

At 2:30 P.M., approximately 20½ hours postpartum, following completion of the blood transfusion and with the premedication of 0.3 mg. of atropine, a D & C was performed under cyclopropane anesthesia. With the use of a sponge forceps, followed by a large sharp curette, a modest amount of tissue was removed which appeared to be of placental origin. At the end of this procedure the bleeding seemed to be controlled, the vital signs were stable, and the color was good. The B.P. was recorded at 120/70 and the pulse at 88. Twenty-five minutes after the commencement of the D & C, the patient was returned, still asleep, to the recovery room. The vital signs at this time were recorded as being normal.

Ten minutes later, in the recovery room, at 3:05 P.M., some twenty-one hours postpartum, a complete absence of pulse and respiration was noted. At 3:08 P.M. the patient was returned to the delivery room, the anesthetist arrived and started positive pressure breathing, and another physician began closed cardiac massage. About ten minutes later the heart began to beat spontaneously, but shortly thereafter, again ceased to beat, and once more closed cardiac massage was instituted. Cardiac function resumed only to cease for the third time. During this interval the attending physician returned, in company with consultants from the cardiology and general surgical services. A thoracotomy was performed (the pericardium was not opened), and the heart was found to be dilated and had "almost stopped beating." Open massage was continued until the heart resumed beating on its own. Throughout the entire period of cardiac resuscitation the pupils were widely dilated and the femoral and popliteal pulses were considered to be rather weak, although definitely present. A double cut-down was performed and additional blood was given. At 4:55 P.M., for the first time since the cardiac arrest, spontaneous respirations occurred. By now a total of four pints of blood had been given.

Equipment was kept in readiness for resumption of artificial respiration, and a cardiac monitor was attached to the chest. At 7:00 P.M. ventricular fibrillation was noted, and at 8:25 P.M. respirations ceased. The Pacemaker was started and positive pressure breathing was again instituted. Vasopressor drugs were administered by a continuous intravenous drip which resulted in a detectable blood pressure which slowly rose and stabilized at 110 to 120 systolic.

Despite all measures, the patient continued to be unresponsive and the following day was one of progressive deterioration; both temperature and pulse began to rise and the blood pressure began to fall. The urinary output was negligible with a total output of 100 cc. during the ensuing thirty hours. A repeat blood count revealed a hemoglobin of 10.8 gm; RBC 3.6 M. and WBC of 34,000, wih 8 adult polys, 65 stabs, 15 normal lymphocytes and 6 normoblasts.

The patient was pronounced dead at 8:00 P.M., approximately 50 hours after delivery and 30 hours after cardiac arrest. The autopsy was significant only for retained placental tissue in the uterine fundus.

Discussion

A precipitate delivery in the labor bed is at times unavoidable. However, the failure of prompt placental separation in addition to a recognized perineal laceration should have initiated the immediate removal of the patient to the delivery room. The twenty-five minute third stage should have been followed by a careful examination of the placenta and the possibility of retained adherent placental elements as likely. This, superimposed on a difficult breech delivery in bed, makes obligatory an exploration of the vagina, cervix and uterus. Had this been done, the subsequent events would most likely not have occurred.

It is beyond comprehension that this patient could have been observed to be bleeding in increasing amounts throughout the night and the following morning without her physician having been notified. The extent of the blood loss was not appreciated by the nurses and apparently not by her physician when he was finally notified and saw her. Neither pallor nor cyanosis may be readily apparent in a Negress. The combination of a rising pulse rate and lowering blood pressure with laboratory evidence of anemia should have suggested prompt and adequate blood replacement. The nature of the vaginal bleeding was such that there was time for appreciable blood replacement prior to exposing the patient to a general anesthetic and exploration of her birth canal with the likelihood of inducing further blood loss. The known variability of the increasing blood volume in pregnancy is a well recognized fact in explaining why some patients tolerate blood loss less well than others. The patient received but one pint of blood preoperatively over a two hour period—with but one additional pint in reserve. This is evidence that the physician failed to appreciate the amount of blood loss and her rather rocky clinical condition. Enough blood, given with positive pressure, should have been administered until her vital signs were stabilized prior to her exploration. The finding of a pulse rate that is persistently above 100 without any other apparent cause almost always suggests a blood loss between 1,000 and 2,000 cc. As tissue ischemia and anoxia is a continuing process, rapid restoration of her blood volume deficit was mandatory, and there is very little doubt that her anemic anoxia set the stage for her eventual tragedy.

It is well known that continuous observation is a major secret of safe anesthesia. Cardiac arrest can occur during the induction, during the surgical procedure, and during the recovery phase. This patient, already hypoxic, was exposed to deep cyclopropane anesthesia with resulting increased hypoxia, and while still deeply anesthestized, was removed to the recovery room. Certainly, one of the often-noted trigger mechanisms of cardiac arrest is the impatient transport of an anesthetized, anoxic and likely hypovolemic patient. In addition, a patient reacting from anesthesia will frequently retch or vomit, and this can stimulate the vagal reflex and trigger a cardiac arrest. Continued intelligent surveillance usually will detect some prodromal signs of cardiac arrest. Variation in the blood pressure, heart rate and rhythm, respiratory difficulties, and muscular twitching frequently precede a cardiac arrest.

Any sudden unexplained absence of pulse and blood pressure must be presumed to be caused by cardiac arrest and immediate resuscitative procedures then and there instituted. The most important single factor in survival is early diagnosis. Since four minutes is the maximum time interval for a neurological recovery, closed heart massage and mouth to mouth resuscitation should have been instituted promptly in the recovery room. To insure a firm foundation, the patient can be placed on a board or on the floor. If effectively performed, these measures would have supplied the patient with both circulation and oxygen. Meanwhile, additional help and appropriate equipment could have been sent for. Improved oxygenation would have been obtained with the insertion of an endotracheal tube and the use of oxygen under positive pressure.

In cardiac arrest, the heart is either in asystole or in ventricular fibrillation, and in either case, closed cardiac massage should be continued until an EKG can be taken to determine which of the two possibilities is present. The effectiveness of the closed cardiac compression can be determined by palpation of the carotid or femoral pulses. Faulty technique certainly leads to little or no pulsation. In the interim, appropriate equipment might have arrived so that an open cardiac massage could have been substituted. Ventricular fibrillation, as a rule, can only be converted to a normal rhythm by the use of a defibrillator which can be effective in association with both closed and open cardiac massage. The technique of closed cardiac massage can and should be taught to both the nursing personnel and the house and attending staffs. Open cardiac massage must be relegated to those experienced in this procedure.

Once cardiac resuscitation has been achieved, continuous monitoring of the heart with a cardiac monitor is absolutely mandatory, in addition to close observation of the patient's vital signs. It is essential that all the necessary equipment and personnel be available to cope with the frequent recurrence of cardiac arrest. Keeping the endotracheal tube in place attached to a source of oxygen is fundamental.

During cardiac resuscitation, attempts to correct the cause is paramount. Obviously, severe anemic anoxia requires the rapid transfusion of large amounts of fresh whole blood. Cardiac compression can hardly be effective in the face of a severe deficit of blood volume. It is notable in this case that after four units of blood, the hemoglobin values were not improved. The use of a cardiac pacemaker may at times correct a cardiac systole but is of no value in the management of ventricular fibrillation, which demands the electroshock defibrillator. The widely dilated pupils were synonymous with severe cerebral anoxia, and ineffective cardiac resuscitation. Since the brain can withstand anoxia for a maximum of four minutes, the time of the arrest must be carefully recorded. If it has been longer than four minutes before the arrest is corrected, there is little hope for neurological recovery, and it is a serious moral issue as to whether attempts at resuscitation should be instituted when the best result must be the creation of a living vegetable. This patient manifested irreversible brain damage by her failure to regain consciousness, by the persistently widely dilated pupils, delayed spontaneous respiration and by rising temperature. The renal shut-down reflected both the duration and degree of circulatory failure and the hopelessness of recovery in this patient.

In summary, this is again the old story of too little and too late in terms of recognition of degree of blood loss and its prompt and adequate replacement. The resulting severe and prolonged anoxia set the stage for the patient's cardiac arrest. The arrest was then triggered by the additional insult of deep cyclopropane anesthesia, and the impatient and contraindicated removal of the patient from the operating room to the recovery room. The delay in recognition and institution of proper treatment of her resulting cardiac arrest denied this patient any chance of survival.

The time spent on developing just one new, efficient drug product—if only one person were involved in all the study and research—would require 19 working years—or 58,000 hours—of a research chemist's life.

AROUND THE STATE

New Haven County

Testimonial For Dr. Denis S. O'Connor

On June 24, 1965, Dr. and Mrs. Denis S. O'Connor were the honored guests of the New Haven County Medical Association at a dinner at the Villa Capri in Wallingford. The Board of Governors felt that Dr. O'Connor should not leave the field of County and State activities, in which he has served long and faithfully, without an expression of their appreciation.

The evening will be long remembered by the very large attending group for the feeling of togetherness which prevailed. Dr. and Mrs. O'Connor were presented with a beautiful and suitably inscribed silver water pitcher. A guest book which collected the signatures of all of those in the assemblage was turned over to our guests at the close of the evening.

H. A. Levin, m.d., Clerk

News From Connecticut State Department Of Health

The Connecticut State Plan for the construction of facilities for the mentally retarded under provisions of the Mental Retardation Facilities and Community Mental Health Centers Construction Act has been approved by the Federal Government, it was announced recently by Franklin M. Foote M.D., State Commissioner of Health.

In the letter to the state health department giving the approval of the plan, T. H. Hynson, M.D., Acting Regional Health Director of Regional II of the Department of Health, Education and Welfare noted in part. . . . "As the first plan in the United States to be submitted and approved under this program, we want to congratulate you on your development of a program which will initiate action in providing Federal Assistance for the construction of facilities for the retarded in Connecticut."

Under provisions of the Federal legislation, Connecticut will receive $100,000 in fiscal 1965; $132,000 in 1966; $158,000 in 1967 and $315,000 in 1968 for allocation to sponsors of eligible projects of a nonprofit or governmental nature which offer a community service without restriction to color, creed or economic status.

Some of the services for which construction funds will be allocated include, diagnostic and evaluation, treatment, training, sheltered workshop, residential and day care facilities.

Newly discovered cases of pulmonary tuberculosis in Connecticut for the first six months of 1965 have totaled 211, up from 198 and 170 respectively for 1964 and 1963, but below the 1962 level of 240, said Franklin M. Foote, M.D., Commissioner, Connecticut State Department of Health. Other forms of tuberculosis beside pulmonary totaled 39 in the first half year, compared with 65 in the like period of 1964.

There were 3 salmonella cases reported during the latest week compared with 4 the week before. This infection of the digestive system is spread most commonly by the eating of contaminated foods, Dr. Foote noted.

Chickenpox dropped to 105 from 187, and German measles cases to 21 from 47. Measles also continued a declining trend at 85 off from 92.

Streptococcal sore throat cases rose abruptly in the latest week to 462 from 263 the previous week.

A new summer program of short-term admissions to the State's two institutions for the mentally retarded, designed to provide supervised recreation for such children and also to permit parents of such children to take vacations of their own, was announced recently by Bert W. Schmickel, Deputy Commissioner of Mental Retardation, State Department of Health.

The program, the first of its kind in the nation, will be conducted at the Mansfield and Southbury Training Schools. At each institution approximately 50 beds will be made available during the remainder of July and August.

"By using these beds on a rotating basis for short-term admissions of one, two or three-week periods," Mr. Schmickel said, "as many as 300 or 400 mentally retarded children can be accommodated under the experimental program."

The beds at Mansfield and Southbury have become temporarily available during the summer months because some children who are permanent patients have been taken home by their parents for summer holidays.

Mr. Schmickel said that the maximum charge for short-term summer admission either to Mansfield or Southbury will be $26.95 a week, but this charge, on recommendation of the State Welfare Department, may be reduced if the parents cannot afford it.

"This new project," according to Mr. Schmickel, "will enable parents of mentally retarded children to take vacations of their own with the complete assurance that their children are to be well taken care of under a professionally-planned and supervised program. The institutional programs for the summer will include supervised recreation geared to the abilities and capabilities of the individual children.

News From Yale University School Of Medicine

Joseph F. Hoffman, noted authority on cellular and comparative physiology, has been appointed Professor of Physiology in the Yale University School of Medicine.

His appointment, announced by Charles H. Taylor, Jr., Provost of Yale, will be effective immediately.

Professor Hoffman is head of the Section of Membrane Physiology in the Laboratory of Kidney and Electrolyte Metabolism, National Heart Institute, at Bethesda, Md. He also is on the faculty of the National Institutes of Health Graduate Program and is a lecturer in physiology at George Washington University School of Medicine. He is best known for his investigations of the mechanisms by which substances are transported across cellular membranes.

From 1959 to 1961 he was on the faculty of the U.S. Department of Agriculture Graduate School, and was a research assistant, and then a lecturer and research associate at Princeton University from 1952 to 1956.

He held the John Dwight Sterry Fellowship in Biology in 1949-1950, and the William Greig Lapham Fellowship from 1950 to 1952, both at Princeton University. He was a Visiting Associate Biologist during the summers of 1954 and 1955 at Brookhaven National Laboratory, a Special Fellow with the U.S. Public Health Service and a Research Fellow with the Department of Colloid Science, Cambridge University, from 1956 to 1957. For three years (1956-1959) he was a Research Collaborator at Brookhaven National Laboratory.

A native of Oklahoma City. Okla., he received his B.S. and M.S. degrees from the University of Oklahoma, and M.A. and Ph.D. degrees from Princeton University.

He was winner of the 1956 Travel Award of the American Physiological Society.

Health Examination Survey of Children, Ages 6-11 Years

The Public Health Service's Health Examination Survey, authorized by Congress in 1956, will visit Hartford and Tolland Counties in Connecticut to examine a sample of the child population (ages 6 though 11 years). The examination will be given over a 4-week period beginning August 17.

The survey is part of a nationwide sampling study of children.

The children to be examined will be chosen by a scientific sampling process from the 6-through-11-year population throughout the 2-county area. Approximately 200 children will be selected in the sample.

Examinations will be given in the Health Survey's mobile Examination Center, which will be brought to the area and set up at a convenient site.

The purpose of the survey is to collect on a uniform basis statistical information on various aspects of children's health and to obtain data on certain physical and physiological measurements of these children, relating to growth and development.

The process will include a specially designed limited examination by a pediatrician to detect neuromuscular and joint conditions, and heart disease; a dental examination by a dentist; a test of visual acuity and color vision; an audiometric test performed in a soundproof room; an X-ray of the wrist for bone age; and X-ray of the chest for cardiovascular and pulmonary abnormalities; a 10-lead electrocardiogram; a test of vital capacity using a spirometer; an exercise tolerance test under a measured workload; using a bicycle ergometer; a grip-strength test; and recordings of height, weight, skinfold thickness and various other anthropometric measurements; and a series of psychometric tests administered by a psychologist.

The Health Examination Survey is designed to collect data primarily on growth and development. The survey is not intended as a screening procedure; referral for diagnosis is not made. The fact that the examination is not complete and is not a substitute for a visit to one's own physician and dentist is stressed with the parents of each child examined. A report of findings will be sent to the child's physician and dentist when the parent requests that this be done.

The examining physicians will be fellows or senior residents in pediatrics working temporarily with the Public Health Service. Other members of the team will include nurses, a dentist, two psychologists, and X-ray and other technicians regularly on the PHS staff.

Traineeship In The Field Of Accident Prevention

A five-day intensive training course "Introduction to Accident Prevention Programs" will be given at the Griswold Inn, Groton, Connecticut from September 13-17, 1965 by the Connecticut State Department of Health. A grant to cover the cost of 30 traineeships for eligible applicants from throughout the New England area has been received. Program Director is Harold S. Barrett, M.D., M.P.H., Deputy Commissioner, Office of Public Health.

This will be the first course of its kind held in the New England area which covers the broad field of accident prevention. The speakers will be well-known persons, experts in the field of accident prevention. The course will cover the Etiology of Accidents; Defining the Problem; Accident Factors by Age Groups; Physio-Psychological Aspects of Accidental Injury; Agents of Accidents; Accident Prevention Programs in the Field of Home Accident, School Accident Prevention Programs; Programs in Hospitals and Institutions; Industrial Safety Programs; Recreation Safety Programs, and the wide field of Motor Vehicle and Traffic Safety Programs.

Further information concerning eligibility, copies of the tentative program, and Traineeship Appointment Statements can be obtained by writing or calling: Dr. Alexander J. Tutles, Director, Medical Services Division, State Department of Health, 79 Elm Street, Hartford, Connecticut, who is serving as coordinator of the course.

Arrangements in advance for reservations and any necessary tuition fees should be made by September 3rd at the latest. The telephone number is 527-6341, Ext. 395 or 315. The Area Code is 203.

AMA Biomedical Research Institute Advisors Named

Two eminent scientists were named to the Committee of Scientific Advisors of the American Medical Association Education and Research Foundation's Institute for Biomedical Research.

They are Hudson Hoagland, Ph.D., co-founder and executive director of the Worcester Foundation of Experimental Biology, and Severo Ochoa, M.D., who shared the 1959 Nobel Prize for medicine and physiology.

At the same time he announced the appointments, Raymond M. McKeown, M.D., president of the AMA-ERF Board of Directors, also announced the resignation, for reasons of health, of D. D. Van Slyke, Ph.D.

Dr. Van Slyke, member-emeritus of the Rockefeller Institute and the first recipient of an award named for him and given annually by the Association of Clinical Chemists, will, however, continue to serve the Institute as a consultant.

Dr. Hoagland, a physiologist, currently holds an appointment as Affiliated Professor of Biological Psychiatry at Boston University.

He previously taught at Harvard and Cambridge universities, and was head of the Biology Department at Clark University until 1944. In that year he and his colleague, Dr. Gregory Pincus, together started the independent Worcester Foundation for Experimental Biology.

Dr. Hoagland has published numerous works on studies dealing with neurophysiology, adrenal physiology and biochemical aspects of mental disorders, and has served on the editorial boards of three professional journals.

He has also been president of the American Academy of Arts and Sciences. Currently he serves on various visiting committees, and is a trustee of the Worcester Memorial Hospital and the Woods Hole Oceanographic Institution.

He received his Ph.D. from Harvard University in 1927, and has honorary doctorates from Colby College, Wesleyan University, Clark University and Bates College.

Dr. Hoagland received the 1965 Modern Medicine Award for Distinguished Achievement, and was named "Humanist of the Year" for 1965 by the American Humanist Association.

Dr. Ochoa, a native of Spain and naturalized U.S. citizen, received his M.D. from the University of Madrid in 1929, where he lectured and headed the Medical Research Institute until 1936.

Later he conducted research in England before becoming an instructor and research associate at Washington University, St. Louis, in 1941.

He joined the staff at New York University School of Medicine the following year, and currently is Professor and Chairman of the Department of Biochemistry.

Dr. Ochoa shared the 1959 Nobel Prize with Dr. Arthur Kornberg for "their discoveries of the mechanism of the biologic synthesis of ribonucleic and deoxyribonucleic acids."

He holds honorary degrees from Washington, Glasgow, Oxford, Brazil and Wesleyan Universities and has served as president of the American Society of Biological Chemists and the Harvey Society.

Among the awards he has received are the Neuberg Medal, the Price Award of the French Society of Biological Chemistry and Borden Award of the American Association of Medical Colleges.

WOMAN'S AUXILIARY

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AMA Meeting In New York City

More than 1,100 members and 500 children attended the 42nd annual convention of the Woman's Auxiliary to the American Medical Association held at New York's Americana Hotel June 20-24.

Connecticut was represented at the business meetings by four regular, one presidential, and two national delegates, in addition to a number of interested members who attended in a non-official capacity.

Four of our Connecticut members will be serving the W.A.-A.M.A. in official capacities during the year 1965-66. Mrs. Norman H. Gardner of East Hampton as National Chairman of Rural Health; Mrs. Dewey Katz of Hartford as Eastern Regional Chairman of Community Service; Mrs. Edward P. Allen of Orange as Eastern Regional Chairman of Health Careers; and Mrs. Morton Arnold as Eastern Regional Chairman of Rural Health.

The social highlights included a Formal Tea at which Miss Eleanor Lambert, director of the Ten Best Dressed American Women Awards, served as commenator. The show, courtesy of Coty, a division of Pfizer Laboratories, featured designers' selections ranging from extreme discotheque to very formal jeweled gowns with a Grand Finale of ten models showing gowns totaling a cost of over $15,000. On Monday at luncheon TWA presented a showing of foreign costumes, leaders of National Women's Volunteer Organizations were guests, and the guest speaker was Catherine May, Republican from the State of Washington who spoke on the subject "Women *Can* Make the Difference," a warning against federal government control.

The Annual Luncheon in honor of the Past Presidents of the Woman's Auxiliary and A.M.A. Officers and Trustees and their wives was beautifully decorated for the Theme, "Freedom Bells for Medicine." The guest speaker was Dr. Donovan Ward whose topic was "Caesar Had His Brutus." The highlight of this meeting was the presentation of a check for $320,121.87 to Dr. Raymond M. McKeown, President of AMA-ERF from the Woman's Auxiliary representing the total of contributions from all 50 State Auxiliaries.

In her inaugural address, Mrs. Richard A. Sutter, St. Louis, 1965-66 Auxiliary president, urged doctors' wives to participate in action programs on public problems, coordinated with other agencies and organizations, working at local, state and national levels.

Highlights of the business meeting included three minute reports from each of the 50 State Presidents; presentation of a National Safety Council Award of Honor to the Woman's Auxiliary to the Arizona Medical Association for its GEMS program, (a baby sitter training program); a panel on "Cost of Illness—What's That" broken down to "The Health Care Dollar," "The Hospital Share," "Health Insurance," "The Physician's Share," "Cost of Drugs," and "Government Medicine Costs"; a report and special film on the AMA Institute for Bio-Medical Research which everyone was invited to visit when in Chicago; a discussion, "Mental Health is Everybody's Business" and announcement that the "Bulletin" will have its name changed to MD's Wife, will be professionally produced in color, and sent to every member of the Auxiliary six times per year.

Auxiliary Calendar For 1965-1966

September 13, 1965—Board Meeting and Workshop.
October 10-13, 1965—National Conference in Chicago.
October 25—Board Meeting and Workshop.
November 8—Fall Meeting and Luncheon.
January 17, 1966—Board Meeting.
March 21, 1966—Board Meeting.
April 27, 1966—Annual Spring Meeting and Luncheon.

Eastern Regional Workshop At Hotel

October 21-22, 1965—Americana in New York City for State president and president-elect and the following State Chairmen: AMA-ERF, Community Service, Health Careers, Legislation, Membership and Mental Health.

BOOKS RECEIVED

Books received for review are acknowledged in this department and such acknowledgement must be regarded as a sufficient return for the courtesy of the sender. Selection will be made for review in the interests of our readers and as space permits.

Surgery Of The Parotid Gland. Edited by Robin Anderson and Louis T. Byars. The C. V. Mosby Company, St. Louis, Missouri, 1965. 17 pp., with 127 illustrations. $12.75.

From Auscultation To Phonocardiography. Edited by Aldo A. Luisada, M.D. with the collaboration of D. M. MacCanon, L. M. Rosa, P. M. Shah, and R. Zalter. The C. V. Mosby Company, St. Louis, Missouri, 1965. 351 pp. with 196 illustrations. $17.75.

Physical Examination Of The Joints. Authors: William P. Beetham, Jr., M.D,. A.A.C.P.: Howard F. Polley, M.D., M.S. in Medicine, F.A.C.P.: Charles H. Slocumb, M.D. M.S. in Pathology; Walt F. Weaver, M.D., M.S. in Medicine, A.A.C.P. W. B. Saunders Co., Philadelphia and London, 1965. 198 pp. with 15 anatomic drawings by Russell L. Drake. $7.50.

New Drugs. Evaluated by the A.M.A. Council on Drugs, 1965, American Medical Association, Chicago, Illinois. 510 pp. Price not specified.

Textbook of Obsetrics. John C. Ullery, M.D. and Zeph J. R. Hollenbeck, M.D. and thirty-one contributors. Foreword by Richard L. Meiling, M.D., The C. V. Mosby Co., St. Louis, Mo., 1965, 752 pp. with 292 figures and 3 color plates. $17.50.

Doctor's Office

Harold S. Appell, M.D., announces the association of Ronald C. Savin, M.D., for the practice of dermatology at 315 Whitney Avenue, New Haven.

George E. Becker, M.D., announces his association with Dr. James W. Major and Dr. William A. Whalen, for the practice of general orthopedic surgery, including reconstructive and traumatic surgery, as well as surgery of the hand, at 132 Mansfield Avenue, Willimantic.

Gerald E. Cooney, M.D., announces his association with Dr. Jules S. Terry and Dr. Charles D. McCullough for the practice of obstetrics and gynecology at 2685 Main Street, Bridgeport.

William E. Cushman, M.D., announces the opening of offices for the practice of surgery at 45 Connecticut Boulevard, East Hartford and 140 Woodland Street, Hartford.

Claudio Crupi, M.D., announces the opening of an office for the practice of otorhinolaryngology at 911 Country Club Road, Waterbury.

Lyman B. Fogg, M.D., announces his association with Dr. Colby S. Stearns and Dr. Albert C. Hurwit in the practice of radiology at 758 Main Street, East Hartford.

Steven Mogel, M.D., announces the opening of an office for the practice of clinical psychology at 50 Gillett Street, Hartford.

Willard J. Morse, Jr., M.D., announces his association with his father, Dr. Willard J. Morse and Dr. Alfred B. Vandersluis in the practice of obstetrics and gynecology at 27 Norwich Avenue, Colchester.

Eugene R. Rightmyer, M.D., announces the opening of an office for the practice of neurological surgery at 114 Sherman Avenue, New Haven.

Hee Riyong Yoon, M.D., announces the opening of an office for the practice of otolaryngology at 1026 Park Avenue, Bridgeport.

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OBITUARIES

Charles T. Flynn, Sr., M.D.
1888 - 1965

On June 28, 1965, the bell tolled for Dr. Charles Flynn. The loss of this grand and respected physician to greater New Haven area was surpassed only by a greater loss to New Haven County and Connecticut State medicine.

His popularity stemmed not only from his medical and surgical abilities, but also because of his kind and considerate dealings with all his patients. Financial rewards were secondary to him.

No meeting of city, county, state, or hospital could be dull when "Charlie" Flynn was present. Always the warrior. He was courageous, determined and yet carried over no animosity.

Born in New Haven October 3, 1888, the son of the late Alexander W. and Anna Conway Flynn, he attended New Haven schools. He graduated from Yale School of Medicine in 1911. During this period, he had served as a registered pharmacist.

After an internship at St. Raphael's Hospital, he conducted a general practice for a few years. This was followed by a resident training at the Manhattan Eye, Ear and Throat Hospital in New York City. Until his demise, he confined his practice to upper respiratory and ear diseases.

A past president of the New Haven Medical as well as the New Haven County Medical Association, he was also a member of the State Medical Society, the AMA, the American Board of Otolaryngology, and was past vice president of the New England Otolaryngology Society.

He was a member of the Yale Club of New Haven as well as of New York. In addition, he was a member of Mory's Association. He served as chairman of Ear, Nose and Throat Department of Yale Medical School, as well as for St. Raphael's Hospital. Later, he became president of the staff at the hospital.

Active in civic affairs, Dr. Flynn was chairman of the Hamden Board of Health from 1931-1948. He acted as campaign manager for the late U. S. Senator Francis T. Maloney from 1932-1940. In 1936, he was a presidential elector. In addition, Dr. Flynn was a trustee of the Connecticut Savings Bank, past president of the Knights of St. Patrick, and a member of St. Mary's Holy Name Society.

He leaves his wife, Mrs. Mary Kelly Flynn of Branford. (His first wife, Josephine Blake Flynn, died in 1932); six sons, Dr. Charles T. Flynn, Jr., of Meriden; Dr. John H. Flynn of New Haven; Dr. Joseph R. Flynn of Wallingford; Robert A. Flynn of Woodbridge; Cmdr. William J. Flynn, U. S. Navy, Stephen P. Flynn of New York City; a stepson Dr. Edward J. Degnan of Albany, N. Y.; a daughter, Mrs. Harold Wade of California; a sister, Mrs. Frank J. Dunn of Hamden; two brothers, Alexander Flynn of New Haven; and Dr. William H. Flynn of Hamden; and 32 grandchildren.

Not all generations have a Charlie Flynn. It was so rewarding to have been his colleague.

A. Lewis Shure, m.d.

Anthony Sperandeo, M.D.
1900 - 1965

Dr. Anthony Sperandeo of 256 Sherman Avenue, New Haven, Connecticut, died suddenly at Yale-New Haven Hospital on June 25, 1965, of a heart attack at the age of 65.

Dr. Sperandeo was born in New Haven, Connecticut on February 29, 1900, the son of the late Angelo and Rose Rendin Sperandeo. He was graduated from the Yale Sheffield Scientific School in 1921 and the Yale School of Medicine in 1925. He served a one year internship at the Hospital of St. Raphael and then entered general practice in 1926.

Dr. Sperandeo was a member of the American Medical Association, the New Haven Medical Society, the New Haven County and the Connecticut State Medical Society, and courtesy staff of the Hospital of St. Raphael.

During World War II he saw service in the European Theater with the Army and took part in the invasion of North Africa after which he was stationed in the Oran African Hospital as Medical Officer.

In his 40 years of general practice he was beloved by all his patients and held in high esteem for his fine qualities, good counsel and his true understanding of the family physician relationship.

On June 12, 1965, Dr. Sperandeo celebrated his 40th Yale Medical Class Reunion at Yale.

Joseph V. Petrelli, m.d.

Joseph Heyman, M.D.

1894 - 1965

In the passing of Dr. Joseph Heyman of 85 Belknap Road, West Hartford, on May 25th after a brief illness, the Greater Hartford community and the medical profession at large suffered a great and grievous loss.

He was born in Yassy, Rumania. He was a graduate of the National Gymnasium of Yassy; a graduate of the Medical College of Virginia in 1917; and served his internship and residency in general surgery at Bellevue Hospital and Mount Sinai Hospital in New York. He served in the Medical Corps as first lieutenant in World War I.

He entered active practice in Hartford in 1923 and was engaged throughout the ensuing years in an active, vigorous surgical practice. He was on the courtesy staff of the Hartford Hospital and the St. Francis Hospital, and consultant surgeon at the Institute of Living; for many years he served with distinction as the senior attending surgeon on the McCook Memorial and the Mount Sinai Hospital staffs, all in Hartford.

He was a member of the local, county and State Medical Society; was a Fellow of the American College of Surgeons; a Fellow of the International College of Surgeons; and Fellow of the AMA.

Surviving are his wife, Mrs. Edith Gordon Heyman; two daughters, Mrs. Marshall A. Dana of Brookline, Mass. and Mrs. Irwin Swirsky of Springfield, Mass.; six grandchildren; a brother, Jack Heyman of West Hartford; two sisters, Mrs. Rose Werner of Hartford and Mrs. Clarisse Scherzer of Union, N. J.

What he initiated, achieved and personified as a physician will live on as an enduring inspiration to those privileged to be administered by him and to know him. To his beloved wife, children and grandchildren the medical profession extends its heartfelt sympathy at this time of their great sorrow.

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1965 MEETINGS

September 24–40th Clinical Congress to be held in Mary S. Harkness Auditorium at the Yale University School of Medicine, New Haven. The program will be devoted to "Advances in the Treatment of Infection" and "Advances in the Treatment of Shock".

October 10–The annual scientific meeting of the American College of Nutrition will be held at the Americana Hotel in New York City on Sunday, October 10, 1965, at 10 a.m. For further information, please contact Robert A. Peterman, M.D., F.A.C.N., Secretary, 3 Craig Court, Totowa Borough, New Jersey 06512.

October 28 – 182nd Semi-Annual Meeting of The New Haven County Medical Association will be held at the Waverly Inn, Cheshire, Connecticut. The Business Meeting is tentatively scheduled for 3:30 P.M. Further details will be furnished as soon as arrangements are completed.

December 8–Connecticut Society of American Board Surgeons Annual Meeting to be held at the Hotel America in Hartford, Connecticut. Please note change in date from December 1 to December 8.

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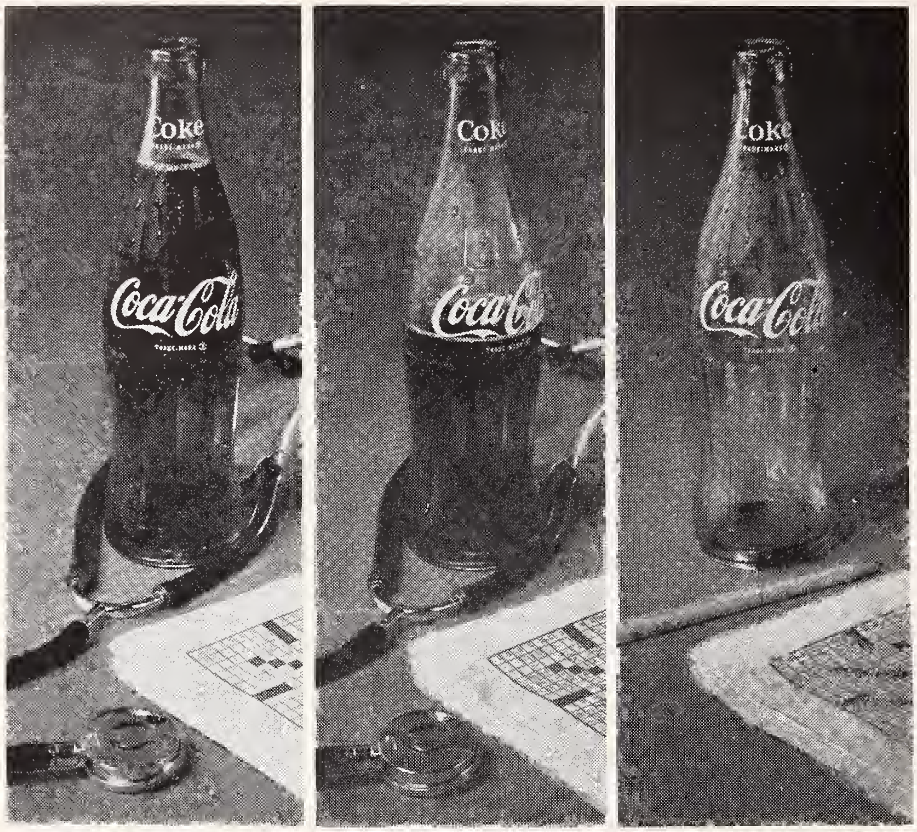

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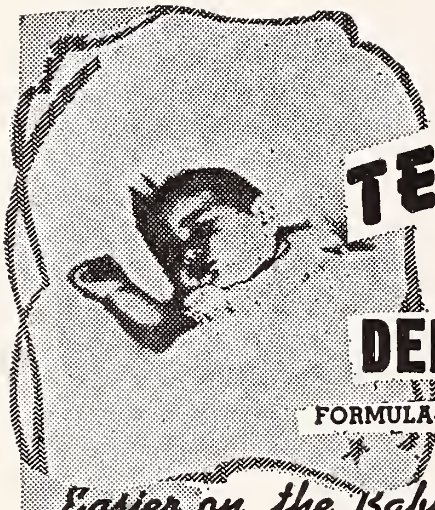

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NEW BOOKS IN REVIEW

CLINICAL NEUROLOGY. By Frank A. Elliott, M.D., F.R.C.P., W. B. Saunders Company, Philadelphia and London, 1964, 688 pp., 178 figures. $12.50.

Reviewed by: LOUIS H. NAHUM

In making a diagnosis one elicits significant symptoms and on examination, significant signs. At this point one has several choices. One can order a "battery" of laboratory, radiological, and other tests in the hope of "falling onto" something significant. The other approach is to make some strong inferences from the data elicited by physical examination, and if no most probable diagnosis presents itself to seek additional data to eliminate one differential diagnosis by another until by exclusion the final diagnosis becomes clear. It is the second method that is most scientific and scholarly and is actually the quickest, safest and cheapest in the majority of cases.

In this outline by Elliott, it is the second method that is made possible and pursued. If a student or resident will follow the method of strong inference for differential diagnosis in neurology, he will find in the first 8 chapters the diagnostic significance of symptoms and signs. He will learn to interpret the clinical phenomena when possible in terms of the basic neurological sciences.

He can then go on to the remaining 13 chapters which deal with individual diseases. This manner of dealing with pertinent anatomic and physiologic considerations introduces a measure of logic into a rather complex discipline and makes it more intelligible. Radiology and the laboratory will then become a supplement to diagnosis and will not supplant the role of the physician. Each chapter is followed by pertinent references but I am afraid the student will be led to believe that hardly anything has been added to this burgeoning field in the last five years. If he should follow these references too closely he will miss the real breakthroughs that have occurred in neurophysiology in the last decade, especially in reference to function of interneurons, basis of memory and biological rhythms.

Neurology has been fiilled with eponymes and the author has wisely restricted their use and has placed more emphasis on the common rather than the rare diseases.

The printing and figures are in the usual elegant style which we have learned to expect from Saunders.

ENGLISH MEDICAL HUMANISTS, Loan Clendening Lectures on the History and Philosophy of Medicine, Twelfth Series by C. D. O'Malley, Lawrence, Kansas: University of Kansas Press, 1965, 52 pp., $2.00.

Reviewed by: HERBERT LEVINE

The appearance of another volume of Logan Clendening Lectures on the History and Philosophy of Medicine is always a welcome event in medical scholarship. In this, the twelfth series, O'Malley presents an account of two sixteenth century British physicians, Thomas Linacre and John Caius.

In the early years of the sixteenth century medical humanists who supported the doctrines of Galen and other Greek authorities attempted to advance medicine from the superstition and folklore of medievalism. In the middle years of the century, the emergence of newer, less authoritative medical ideas put the proponents of Greek medical authority on the conservative side of a second controversy. It is with the earlier of these two sets of opposing movements that most of the present volume deals.

Recovery of the Greek language and study of Greek medical texts began on the Continent, particularly in Italy, in the fourteenth and fifteenth centuries. At the beginning of the sixteenth century there were only two places in England where there was some interest in Greek—the monastery of Christ Church in Canterbury, and Oxford. Thomas Linacre was born in Canterbury in 1460 and studied at both these institutions. He went to Italy in 1487 and studied Greek for two years in Florence before proceeding to Padua, where he received the M.D. degree in 1496. Upon his return to England he practiced in London and was appointed physician to Henry VIII in 1509. Soon thereafter, in order to devote more time to literary studies, he took holy orders, but retained his position as Royal Physician and carried on a limited practice. He numbered Erasmus and Sir Thomas More among his patients and friends. He devoted the bulk of his time, however, to translating from Greek into Latin a number of Galen's works. He also arranged for the publication of similar translations by other scholars. His goal was to improve the quality of medical practice in England by making this material available.

The Medical Act of 1511 restricted the practice of medicine in England to graduates of Oxford and Cambridge, and practitioners licensed by the bishops. Seven years later Linacre and five other physicians founded the College of Physicians of London, which was granted the power to regulate medical practice in London and for seven miles around. It was through wise use of this power that Linacre hoped to improve, again, the standards of medical practice. Since the English universities did not then have organized, separate faculties of medicine, the College became the "medical center," the focus and unifying force of London medicine.

John Caius was born in 1510, and was already proficient in Latin and Greek when he entered Cambridge in 1529. After studies there he also went to Padua, and for a time lived in the same house with Vesalius. They soon parted company over criticism of Galenic doctrine, of which Caius was a firm supporter. He obtained his M.D. degree in 1541, but remained another year in Padua to lecture on the philosophy of Aristotle. He spent the next three years in Italy, Switzerland, Germany, and Belgium, seeking out and studying medical manuscripts. He returned to England, settling briefly in Cambridge and then in London, where he became anatomical demonstrator to the United Company of Barbers and Surgeons. In 1547 he was admitted to the College of Physicians, and quickly became not only an important figure in the College but also a prominent and successful practitioner. He wrote the first treatise dealing with a specific disease, the epidemic "sweating sickness," probably a form of influenza. He translated and edited a number of medical texts. He served nine terms as President of the College of Physicians and in this position used his authority to restrict unqualified physicians. He also engaged in considerable controversy with the universities in an attempt to upgrade the quality of medical education. He was a staunch Galenist throughout his career, but this very view which was a progressive one in Linacre's day had become a conservative one thirty years later. Nevertheless Caius made significant contributions to medical progress by his influence on the College and his scientific competence.

This volume provides a fascinating glimpse of great figures and important movements in a time of rapid evolution in British medicine.

"FRACTURE PROBLEMS." By William Hamilton Harris, M.D., William Norman Jones, M.D., and Otto E. Aufranc, M.D. The C. V. Mosby Company, St. Louis, Missouri, 1965, 371 pp. $20.00.

Reviewd by: DENIS S. O'CONNOR

Fractures, whether treated by general practitioners or by orthopaedic specialists cannot always be simple problems and when a problem arises, a highly experienced consultant is not always available. The routine fracture manual is not always helpful in helping to make the decision as to treatment from the many possible approaches.

It is for these reasons that this work is of such great value. Anyone who is familiar with the Massachusetts General Hospital fracture service knows that the service there is one that is in charge of a Chief of the Fracture Service, that each of the surgical services as well as the orthopaedic service handle fractures but all are accountable to the Chief of the Fracture Service. The weekly fracture rounds, largely attended, with opportunity for comment by anyone and free expression of opinion is probably one of the best fracture clinics in the country. The results in the course of treatment, as well as after the end result is attained, gives a complete picture of the general quality of fracture treatment carried out at the Massachusetts General Hospital.

This volume has selected for presentation the problems of fracture treatment by presentation of cases with the discussion of treatment before definitive treatment is started and criticism of treatment which fails.

There is scarcely any fracture problem which has not been presented. Therefore, this book is almost a personal consultation by the Massachusetts General Hospital Fracture Clinic Staff as well as visiting authorities.

While the price seems high, it is an extremely small price to pay for such highly specialized authoritative opinions in the face of even one of these problems.

Anyone whose practice includes fractures, whether he be a fully trained orthopaedist, a general surgeon, or a general practitioner cannot afford to be without this valuable work.

THE VISUAL FIELDS. A Textbook and Atlas of Clinical Perimetry. 2nd Edition by David O. Harrington. The C. V. Mosby Company, St. Louis, Missouri, 375 pp. with 318 figures and 9 color plates. $16.50.

Reviewed by: STEVENSON FLANIGAN

The Visual Fields (second edition) is a reference text, providing description of a broad spectrum of variations and deviations beyond the reliable recollection of past experience for many who make the examination a routine. Yet another contribution rests in the avowed intention of pointing out the simplicity with which such an examination can be carried out and the remarkably informative rewards that await "discovery" in the trying symptom complexes that often surround lesions involving the optic pathways.

The ground rules for the basic principles of the examination are set forth in cook-book fashion. A perusal of even the first few pages will grossly enhance case findings, with less a demand for equipment than is necessary for a routine blood count. For the more tenacious reader there are refinements and tricks that will provide both accuracy in the lesser defects, and reassurance in such difficult areas as hysteria.

The reference part of the work is catalogued according to the locale of lesions affecting the visual pathways. The examples are well illustrated with "the lesion and the field" at a glance, and the composite plates, of which there are nine, offer a wealth of differential information on single pages.

The text is conversational and in many instances is personal. It is easy to read and any loss in reference quality on that count is covered with a relatively complete index (as witnessed in the topic of eye pain with homonymous hemianopsia). The character of macular sparing with the more posterior lesions is amply reviewed and illustrated.

It must be kept in mind that the subject is a closely circumscribed presentation of clinical material, and the enumeration of associated signs and symptoms in a given lesion may be somewhat limited. On the other hand the use of this sort of diagnostic tool for serial follow-up is appropriately considered a basic practice in Neuro-ophthalmology. The author has drawn heavily on the time-honored Neuroantomical basis of the clinical manifestation, and such a plan provides a fundamental lattice for understanding and recollection of the data.

PREVENTIVE MEDICINE. Edited by Herman E. Hilleboe, M.D., and Granville W. Larimore, M.D. W. B. Saunders Company, Philadelphia, 1965, 523 pp. $12.00.

Reviewed by: JOHN B. ATWATER

The second edition of *Preventive Medicine* lives up well to the very high reputation earned by the first edition. It is aimed primarily at medical students and practicing physicians with the objective of helping them incorporate concepts of prevention into their clinical practice. In addition, it provides a brief but rather comprehensive background of knowledge regarding community health practices to which a great many physicians have never been exposed.

Doctors Hilleboe and Larimore have called upon a highly distinguished list of nearly 35 experts, most of them associated with the New York State Department of Health, to write individual chapters of this book. The editing job has produced chapters which are concise, very up to date and loaded with practical applications of the preventive concepts. If there is one criticism to be made, it is that the balance between subjects has been difficult to maintain and the various authors have produced a fruit salad with an abundance of raisins and nuts in comparison to the apples and oranges. To compensate for this heterogeniety of subject matter, the editors have done a very creditable job of indexing, making it easy to locate sections applicable to any particular problem at hand.

It is to be highly recommended both as a reference for current information on numerous technical problems in the field of public health and as a general refresher for the practitioner who finds it difficult to take time to practice prevention. In addition, it is probably the best available general textbook for the medical student who wants to know how public health and preventive medicine can be made applicable to his primary interest of clinical practice.

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The Mound Park Hospital Foundation, with the joint sponsorship of the Florida Academy of General Practice, is pleased to announce a Postgraduate Course in "COMMON PROBLEMS IN GENERAL PRACTICE—OFFICE PROCEDURES"—on dates October 29 and 30, 1965, with registration from 12:00 to 5:00 P.M., on October 28th. A descriptive brochure will be mailed as soon as completed.

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MEDICAL NEWS

NUCLEAR MEDICINE, 1965—20 YEARS AFTER ALAMAGORDO

Prepared By The American Medical Association

Twenty years ago this July, a scientist working at the super-secret Los Alamos, N.M., Manhattan Project laboratory dropped a hint to a non-scientist friend in Santa Fe.

"Tonight," the scientist said, "go to the top of Sandia Mountain and keep looking south. Before the night is over you'll know what we've been doing up here."

The friend took the tip, and in the early morning hours of July 16, 1945, he saw the sun rise in the south. The Atomic Age had arrived in a ball of flame on the floor of the New Mexico desert.

In the two decades since, nuclear science has helped achieve historic advances in all sciences, including biology and medicine. The story of nuclear medicine, 1965, is told in an article appearing in the July issue of Today's Health, a publication of the American Medical Association.

For example, scientists who learned that deoxyribonucleic acid (DNA) is the storehouse of genetic information probably would have been stymied very early in their work if radioisotope "tracer" chemicals had not been available.

At least one Los Alamos scientist has predicted that the biological sciences, with the help of nuclear technology, will produce advances in the next 20 years that will dwarf the atomic bomb. In fact, he believes that advances in biology in the next 10 years may equal or surpass those made in physics in the 1935-45 decade.

Nuclear medicine today has a span reaching from clinical radiology to molecular biology. And most of its growth has taken place in only 23 years—since the first sustained nuclear chain reaction was achieved in a secret nuclear pile under the spectator stands at the University of Chicago's Stagg Field.

The very beginning dates back just 70 years. The German physicist Wilhelm Roentgen discovered X-rays in 1895. Natural radioactivity was discovered in uranium by a French physicist Henri Becquerel, in 1896. Within a few years both X-rays and naturally radioactive elements, especially radium, were being used in medicine.

Prior to the mid-1930's radiation was used without an understanding of its origins. Not until the 1930's did atomic theory and experimental data permit scientists to form a concept of the atom as a nucleus of protons and neutrons surrounded by shells of orbiting electrons. And once scientists began to understand the atom, they began to suspect they could split it.

With cyclotrons and later other particle accelerators, physicists bombarded atoms with other atoms, with protons, neutrons, and electrons, hoping to learn more about the atomic nucleus. In the process they discovered that sometimes certain species of atoms can "capture" a neutron. By capturing a neutron an atom can become a heavier isotope of the same species. Other isotopes can be produced by interaction of certain atoms with high-energy protons, deuterons, and alpha particles. Quite often, however, these man-made isotopes are unstable and decay to a stable atom of the same or another element by emitting energy in the from of radiation. In other words, they are radioactive—"radioisitopes."

Radioisotopes are chemically identical to stable isotopes of their same species. In the chemistry laboratory, radioactive phosphorus is indistinguishable from nonradioactive phosphorus unless the chemist brings a radiation detector into play.

Living organisms, including the human body, are equally unable to differentiate radioactive from nonradioactive isotopes. Radioisotopes introduced into the body behave chemically the same as their nonradioactive cousins.

As early as 1923, scientists had recognized the potential of natural radioisotopes in biological research. By the time artificially created radioisotopes arrived in the 1930's, scientists knew they had a powerful tool for investigation.

Introduce a radioisotope into the body, they said; if its radioactive emanations are energetic enough they will be detectable outside the body. Then the radioactivity will serve as a beacon for us to follow as the radioisotope moves through the metabolic pathways. A doctor reading such signals may be able to determine whether the body is handling this particular chemical in a normal or abnormal fashion. Development of isotopically-tagged chemicals will permit physicans to investigate many bodily functions that could not otherwise be studied.

The therapeutic possibilities of the radioisotope weren't overlooked, either. By the late 1930's medical investigators knew that specific elements or compounds required by the human body could be produced in radioactive forms and introduced into patients. If the compound is tissue- or organ-specific, as iodine is for thyroid tissue, physicians theorized it should carry ionizing radiation directly to the spot to be irradiated. Their theory was correct, but so far the therapeutic uses of radioisotopes are far outnumbered by the diagnostic uses.

Radioisotopes were actually used in patients in the late 1930's and early 1940's. But cyclotron isotopes were rare and expensive. Large-scale use of isotopes had to await their large-scale production. Since large-scale isotope production requires the large supply of neutrons that is found only in nuclear reactors, medicine had to wait for its radioisotopes until 1946 when reactors were released from full-time work on the atomic bomb.

In addition to the clinical applications of nuclear science, nuclear medicine has developed along two other main lines:

1. Experimental—the uses of radioactive materials and technology to investigate the processes of life, health and disease.

2. Environmental-industrial—the protection of nuclear-industry workers and the public from the unique hazards of the Atomic Age.

Experimental Nuclear Medicine

Radioactive isotopes are used experimentally in a number of ways. For example:

1. Administration of radioisotopes loosely combined with complex organic compounds. EXAMPLE: Zinc-65 combined with insulin to determine the time and place of insulin's action.

2. Administration of radioisotopes in simple chemical form to plants or animals which use those particular chemicals in synthesizing more complex compounds. EXAMPLE: Administration of carbon-14 labeled carbon dioxide to plants, with the aim of extracting carbon-14-labeled compounds.

3. Neutron irradiation of experimental animals to cause certain minerals within the body to become radioactive and thereby permit scientists to study their function. EXAMPLE: Neutron irradiation of rats and rabbits to study the paths and functions of trace minerals in mammals.

Experimental nuclear medicine is not tied only to the radioisotope, however. Some other representative areas of investigation include.

The irradiated mice: The thirty-fifth generation of a mouse colony is enjoying life in a laboratory building at Los Alamos. In return for free room and board in comfortable cages the mice furnish information which is helping Los Alamos scientists determine the long-term effects of radiation upon a mammalian population. The possibility of genetic damage to humanity from fallout and other radiation sources, a major concern of the Atomic Age, prompted the investigation.

"For the seven years we've maintained the colony, we have irradiated males with 200 roentgens of cobalt-60 gamma radiation before they are allowed to breed," explains Dr. Wright Langham, group leader of the Los Alamos Scientific Laboratory Biological and Medical Research Group. "We're looking for any genetic weakening of the mouse strain from a constant, high level of irradiation. The results to date fail to show any weakening effect on this mouse population.

"The most outstanding effect we have seen is that the irradiated population has fewer mice per litter than a non-irradiated control population. But the number of litters per female has increased in the irradiated mice, so we get the same number of mice from the irradiated line as we get from the control line.

"We have not been able to produce the genetic death of a mammalian population. When radiation stress at this level is brought to bear on a population, it apparently shifts its equilibrium. We think now that irradiation cannot cause the genetic death of a mammalian population, unless the level of radiation is high enongh to sterilize."

The cutest little fellows. A number of tamarins, small, teddy-bear cute primates are housed at the Oak Ridge Institute of Nuclear Studies, where they are to be used in transplantation studies by Dr. Nazareth Gengozian and associates. Dr. Gengozian says that tamarians, natives of the equatorial forests of Columbia, Ecuador, Peru and Bolivia, are probably the cuddliest-looking of all laboratory animals. Their appearance does not deceive animal handlers who have seen tamarins bite through an armored glove.

It is not the cuteness or vicious temper of the tamarin that biologists find intriguing, however. They are interested in the fact that tamarin females almost always bear twins, and the twins apparently are always fraternal rather than identical. Even more uniquely, an exchange of blood-forming tissue takes place between the twins while they are still in the mother's uterus. The "foreign" tissue received by each twin is not destroyed by their respective immunological sytsems, so each twin is born a chimera, with blood-forming tissues of two genetic types. The chimera of biology, an individual with two types of genetic tissue, is named for the chimera of mythology—an animal made up of incongruous parts.

The discovery of natural chimerism is a windfall for Dr. Gengozian, who has worked for several years on the problem of transplanting bone marrow and other tissues in human beings. The chief problem of transplantation is overcoming the immune barrier—getting the transplanted tissue to "stick" in the face of the host body's anti-foreign-tissue immune reaction. Dr. Gengozian can now ask: If chimerism can exist in nature, can we induce artificial chimerism in animals and human beings? If artificial chimirism could be induced—a bit of pure speculation, Dr. Gengozian stresses — physicians might find it possible to:

1. Replace bone marrow in patients whose own marrow has been destroyed by irradiation—either accidentally or therapeutically for leukemia or other blood diseases.

2. Better understand the nature of immune rejection.

So far, Dr. Gengozian and his associates can only detect male-female tamarin chimerism with accuracy. One of their next projects is to learn how to establish male-male chimerism. Also in planning stages are experiments designed to answer such basic questions as: Can tamarin tolerance for foreign red cells be broken down with ionizing radiation? Are skin grafts effective in indicating tolerance in tamarin chimeras? How stable is the chimerism with age? What are the possible degrees of chimerism? With regard to the latter question, the Oak Ridge scientists have already found one tamarin male whose body was estimated to contain 90 per cent female white blood cells.

Environmental-Industrial Nuclear Medicine

Of all the words invented to explain Atomic Age phenomena, probably none has been used and misused more than "fallout," a term coined in 1945 to describe the radioactive debris that settles to earth after nuclear explosions.

Before the current U.S.-Soviet treaty banning nuclear tests in the atmosphere, arguments concerning fallout raged in newspapers almost daily. The official U.S. government position, as expressed by the AEC, was that fallout from nuclear tests could be dangerous but that consistently dangerous levels of fallout from nuclear bomb testing in the atmosphere had not yet been reached. Some nongovernmental authorities challenged this position in varying degrees, the most extreme saying that every nuclear test produced radioactive materials which weakened the human race through disease and genetic damage. Thus, one task of nuclear medicine has been to attempt to determine how much fallout is a dangerous amount, and to set safety standards for the public.

Of the approximately 200 different radioactive species produced in fission processes, only a few are known to be a possible hazard to man. The hazard represented by a radionuclide depends upon: (1) the amount produced; (2) its radioactive half-life; (3) the efficiency with which it is transferred through the food chain to human diet—that is, whether it appears in possibly harmful amounts on plants consumed directly by man, or on plants consumed by food animals; and, (4) its metabolism in the body of food animals and in the body of man—that is, whether it appears in possibly harmful amounts in meat and milk consumed by man, and whether it concentrates in some area of the human body where it can potentially cause harm.

Some of fallout radionuclides with the most potential for hazard:

Iodine-131—eight-day half-life; concentrates in milk of cattle that eat contaminated feed; concentrates in thyroid of man.

Strontium-90 and Strontium-89—half-lives of 28 years and 51 days respectively; present in cow's milk and leafy plant foods; concentrates in bone of man and animals, although strontium concentration in bone is minimized if enough calcium is available in the body.

Cesium-137—30-year half-life; appears in milk, meat, flour, cereals, vegetables and fruits; behaves in biological systems much the same as potassium but is removed from the body fairly rapidly.

Carbon-14—5,800-year half-life; appears in most biological systems; since carbon is basic to all organic forms of life on earth, it is taken up by all; the amount of carbon-14 produced by nuclear explosions is small, but remains active for many centuries.

Others—cerium-144, zinc-65, iron-55 and iron-59, and cobalt-60 are all concentrated by organisms in the human food chain, but their hazard is not considered great.

Scientists are still gathering data to determine the effects of fallout ingestion on human beings. The final results may not be in for many more years, but the AEC feels that no significant ill effects will be revealed in the population as a whole.

Industrial nuclear hygiene is only as old as the Atomic Age. But, 2,600 health physicists and specialists guard the well-being of the thousands of workers in the atomic and nuclear industries, according to Dr. Harry Schulte, group leader of the Los Alamos industrial hygiene group. By way of contrast—and pointing up the lengths to which nuclear

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* This one at Oak Creek, Castle Rock, Arizona

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safety has been taken—about 2,000 industrial health specialists work in all other American industries combined, helping to safeguard hundreds of thousands of workers. It is a proud point with nuclear health physicists that there has never been a case of plutonium or uranium poisoning among plant or laboratory personnel.

Direct exposure to radiation in a plant or lab is almost always a consequence of carelessness in handling nuclear materials, or of accidents involving nuclear materials. Serious or fatal exposure usually results from a "criticality incident," when fissile material in a liquid solution or a nuclear reactor is accidentally permitted to reach a high level of reactivity. More than 30 such incidents have occurred since 1943, and a few have been fatal. No nuclear explosion accident has ever occurred.

Destruction of a reactor in a criticality incident always results from the heat generated in the "runaway" and not by any nuclear explosion. A detailed study of criticality incidents by Dr. W. R. Stratton of Los Alamos has shown that even the most violent reactor incidents released very little radioactive material into the atmosphere. In every case, dangerous materials were contained inside the building housing the reactor.

A 1961 criticality incident killed three men at an AEC reactor testing area in Idaho, but did not contaminate the area outside the reactor building, even though the reactor building was not air tight. The device here was a boiling-water power reactor designated SL-1. After a shutdown for routine maintenance the reactor was being prepared for restart by a three-man crew when the accident, still unexplained, happened. One of the neutron-absorbing control rods was apparently pulled out manually by one of the crew. The immediate power spike that followed heated water to steam almost instantaneously; a steam explosion wrecked the reactor, killing two men and injuring the third so severely that he died two hours later. Investigators found a high radiation level in the shambles inside the reactor building but almost none outside.

"The power reactor is the answer to the environmental health specialist's prayer," says Dr. Schulte. "It just sits there quietly producing power and doing nothing to pollute the countryside. No smoke, no ash, no smell. . . . In fact, more radioactive material gets into the atmosphere in the fly ash from a coal-burning power station than you'll ever see escaping from a reactor facility."

A partial list of radioisotopes used clinically:

Isotope	*Use*	*How Given*
	In Diagnosis	
Iodine-131	Studies of thyroid function	Usually Orally
Iodine-131	Diagnosis of thyroid cancer	Orally
Iron-59	Studies of iron metabolism (e.g., in suspected anemia)	Usually intravenously
Chromium-51	Red blood cell survival studies	Blood withdrawn, Cr-51 added, blood returned intravenously
Cobalt-60	As label on Vitamin B_{12} to diagnose pernicious anemia	Orally
Iodine-131 Gold-198	As labels on rose bengal, to test liver function and look for tumors in liver	Intravenously
Selenium-75	Studies of pancreas	Intravenously
Gallium-68	Brain scans for tumors	Intravenously
Technetium-99	Thyroid scans; placenta scans in pregnant women	Intravenously
Iodine-131	As label on fat for studies of intestinal absorption	Orally
Strontium-85 Calcium-47	Bone studies; diagnosis of bone cancer	Orally
	In Therapy-Internal	
Iodine-131	Toxic goiter, some kinds of thyroid cancer, some cases of angina pectoris and congestive heart failure	Orally
Phosphorus-32	Some types of leukemia, polycythemia vera, cancer spread to bone, Hodgkin's disease	Orally or intravenously

Krypton-85 Xenon-133	Measurement of cerebral blood flow	Intravenously
Magnesium-28	Studies of intestinal absorption of magnesium	Orally
Mercury-197 Mercury-203	As label on special drug to locate brain tumors	Intravenously
Colloidal gold-198	To dry fluids collected in chest and abdominal cavities	By catheter into cavities
Colloidal P-32	Granulocytic leukemia and diffuse lymphoma of liver	Intravenously
Yttrium-90	Certain cases of prostate cancer	Direct injection into tumor
Strontium-90 Yttrium-90	Radiation surgery to destroy pituitary gland in advanced cancer cases	Direct introduction to site via surgery

In Therapy-External

Cobalt-60 Cessium-137 Radium-226 Radon-222 Strontium-90	Implanted in capsules for certain localized tumors, especially cancer of the cervix and cancers of the head and neck.
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Precautions: During prolonged treatment, patients should be examined regularly. Caution is necessary in patients with metabolic (including diabetes), endocrine, or hepatic disorders; also in those subject to cardiac or renal disorders, epilepsy, migraine, asthma, in which conditions fluid retention is undesirable. Uterine fibroids may increase in size on progestational therapy and may regress after therapy is discontinued. Masculinization of the female fetus has been observed in a few patients receiving progestational agents during pregnancy. In the event of persistent or recurring spotting, consider nonfunctional causes. Not recommended for use by nursing mothers until 6 to 8 weeks postpartum.

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Tell Children The Truth

Tell him the truth, suggests an article in the current American Journal of Diseases of Children, published by the American Medical Association.

Children are remarkably perceptive, and they almost invariably know when something is being kept from them. When the secret is that they have incurable leukemia (blood cancer), the results can be saddening as well as difficult.

"Who's Afraid Of Death On A Leukemia Ward?" is the title of the Journal article by Joel Vernick, M.S.W., group program supervisor of the Social Work Department, Clinical Center, National Cancer Institute, National Institutes of Health, and Myron Karon, M.D., senior investigator and chief pediatrician of the Institute's Medical Branch.

They found that 51 children, aged 9 to 20 and all hospitalized for acute leukemia, reacted with very little anxiety and often with a sense of relief when told of their fatal illness.

"When the physician gives the fateful news to the parents, the child immediately 'knows' that he has something very serious," the report said. "His parents, no matter how hard they try, cannot conceal their own grave concerns.

"The child quickly senses that the people whom he had come to trust and love are keeping something from him, something frightening."

The Institute staff formerly tried to keep death a secret from children in the ward. They told them that the dead child "went to another hospital," or "he went home," or "he went to the 13th floor."

But when it actually became necessary to move a 9-year-old boy to the 13th floor because of overcrowding, he went into panic and became unmanageable.

"That's where kids go to die," he finally said. "When kids get sent to the 13th floor I never see them again."

That is when the staff began to consider telling children about their illnesses, the report said.

To tell children anything but the truth "was not only blatantly absurd but also prevented the development of any meaningful relationship between the child and the adult," the report said.

"Children are very acutely attuned to their environment. When this environment signals that certain subjects are not to be discussed and may be too painful for the adult to deal with . . . the child becomes mute, outwardly accepting the adult's benign words of falsehood but inwardly feeling abandoned. He is left to cope with his fears and anxieties by himself at the very time when he needs and seeks all the strength and support available."

Elaborate efforts are sometimes made to keep fatal illness a secret, with the excuse that it keeps the child from worrying. However, "all of our children were even more worried by the erection of a wall of secrecy," the report said.

She later explained that she still had a lot to worry about, but that she had been even more worried before because she was thinking "a mile a minute" about what she might have.

A 16-year-old boy was not told his diagnosis by his mother until 12 hours before he died. The mother had found it extremely hard to communicate with her son through the six months of his illness. When he asked her point-blank if he had leukemia, she finally told him.

The boy "had spent the last six months of his life denied the emotional strength that his mother could have provided if she had not been busy using all her energy to hide the diagnosis from him," the report said. "She could have done this while her son was still feeling well. By the time an adequate mother-son relationship had been reestablished, his life was over."

A diagnosis should be shared with other children in the family because they, too, quickly guess when something is wrong.

"Mr. J. found it difficult to tell his two sons, ages 14 and 16, that their little brother had leukemia," the report said. "He volunteered that they belonged to the 'hot-rod set' and did little to help with the chores at home. Finally, however, he 'got up the courage.' He was amazed at the change in the older boys' behavior. They became more serious and responsible. 'They both grew a little taller,' he said."

Sometimes the ill child's own friends throw thoughtless barbs. The best way to defend him is to discuss his diagnosis thoroughly with him beforehand, the report said.

"Patient G, age 14, had been told his diagnosis by his parents and his physician. Upon his return from the hospital he was greeted by one of his chums with: "You've got leukemia. You're supposed to be dead.' He quickly snapped back: "Dead, hell, I'm here ain't I?"

The Institute hospital staff realized that most of the 51 children studied in this report had some knowledge of the seriousness of their illness. Some knew exactly what was wrong, and all 51 had worried, the report said.

"Firm in this knowledge, the staff was able to abandon the traditional tact of 'protecting' the child from worry . . . and became actively involved in helping the children cope with the serious concern which every study, so far reported, has indicated exists."

The results of the program were gratifying, the report said.

"Every one of the 51 patients was able to function normally. The withdrawal and depression so often observed by others . . . occurred very infrequently," the report said.

"Who's afraid of death on a leukemia ward?" the report said. "Everyone—and the resolution of this fear is everyone's problem."

Heredity Possible Factor In Glaucoma

A Michigan physician reported findings which offer new evidence that glaucoma, a disease responsible for 40,000 cases of blindness in America, tends to run in families.

The report, published in the current Journal of the American Medical Association, was based on a study by John A. Cowan, M.D., of the Division of Adult Health, Michigan Department of Health.

Of 136 blood relatives of glaucoma victims, Dr. Cowan said, 6.6 per cent of his study group had glaucoma or borderline glaucoma.

This, he said, was about three times the expected incidence of glaucoma among the general population.

Glaucoma is caused by a build-up of fluid pressure within the eye. In "simple" glaucoma—the most familiar and the type studied by Dr. Cowan—the increased pressure leads to a narrowing of the field of vision and eventually to blindness. If detected in time, however, glaucoma usually responds well to medical treatment.

As a result of his study, Dr. Cowan recommended that those patients with a family history of glaucoma should be warned to have regular eye examinations, including tonemetry—measurement of the fluid pressure within the eye.

"Furthermore," he said, "if all complete physical examinations on persons over 40 years of age included tonemetry, there is little doubt that a much larger proportion of glaucoma and potential glaucoma cases would be diagnosed early enough so that medical management could prevent any further vision loss." The disease, he pointed out, is estimated to occur in two per cent of the population over 40.

"Hereditary factors in relation to glaucoma have been suspected for a long time," Dr. Cowan added. "However, relatively few field and clinical studies have been made to determine the nature and prevalence of hereditary glaucoma. Those studies which have been made show relatively great variations in their findings."

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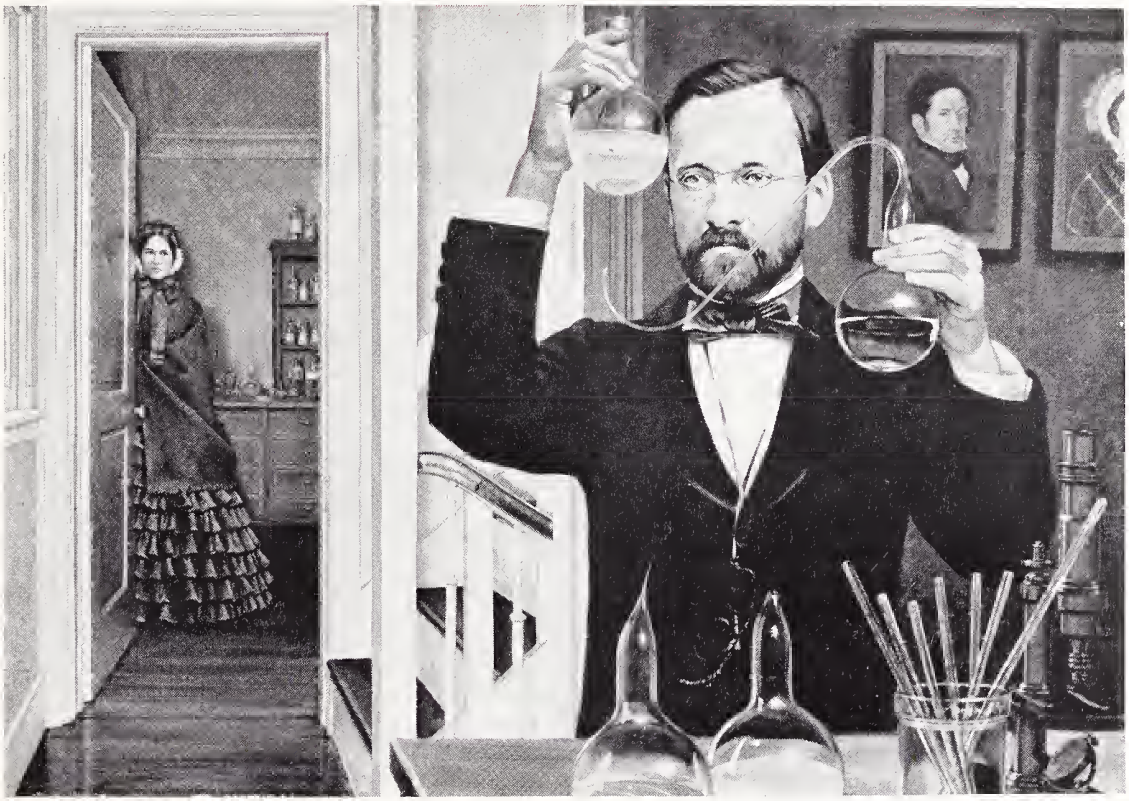

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Connecticut Medicine

editorials

Latent Diabetes And Pregnancy

There is no doubt that sufficient attempts at case finding of latent and manifest diabetes would prevent much human wastage. The physician however, even without case finding is frequently presented with excellent opportunities in nature not merely to detect the manifest diabetic but to find the latent case as well. This occurs in every situation in which burdens on the beta cells of the islands of Langerhans are increased. Corticosteroid therapy increases gluconeogenesis which raises the blood sugar, thereby causing increased demands for insulin. A high carbohydrate diet stimulates the beta cells to secrete more insulin. The growth hormone which rises to three times normal in pregnancy, increases the blood sugar level and with it comes an increased demand on the islet cells for insulin. The combination of these three factors, which occurs in pregnancy, can make a prediabetic into a latent diabetic and a latent into frank diabetes.

Normally, there is no way to diagnose prediabetes except after the fact in retrospect. It is therefore, not a clinical diagnosis. Latent diabetes however, becomes manifest during periods of stresses upon the beta cells, as for example, during pregnancy or corticosteroid therapy or rapid weight gain only to return to normal when the puerperium begins, or corticosteroids are withdrawn or following substantial weight loss. During each of these stress periods, diabetes does exist. Between these periods there is no demonstrable diabetes and therefore the diabetes is latent. Stated in another way, latent diabetes implies a period during which previously demonstrable diabetes cannot be demonstrated by the usual diagnostic procedures. Since pregnancy is a diabetogenic event, latent diabetes may become manifest, but if it does not, it can readily be exposed by a variety of tests and a careful study of previous history of the patient which can raise the index of suspicion of diabetes.

Kyle[1] points out that when there is a history of a large baby, stillborn or neonatal loss, one should seek evidence for diabetes. He points out that 77 per cent of women in one series with infants greater than ten pounds later developed overt diabetes. This is confirmed by abnormal glucose tolerance tests in such women. The same is true in cases of stillborn or neonatal loss, in which glucose tolerance tests in future pregnancies will be more often abnormal than in an unselected series. Most women with an abnormal tolerance test appearing during pregnancy will revert to normal carbohydrate tolerance in the puerperium. Nevertheless, this sign also adds to a high index of suspicion because in these patients permanent diabetes often eventually ensues.

The attempt to search out the latent diabetic has led to an increased interest in the borderline abnormalities of glucose tolerance tests. There has been developed the steroid enforced glucose tolerance, the intravenous tolbutamide test and a prednisone glycosuria test.[2] Each of these has been investigated with the hope it might prove more sensitive than the standard oral glucose tolerance test in demonstrating early evidence of impaired beta cell reserve.

THE COVER

PASTEUR: MEDICINE IS TRANSFORMED

PROOF that microbes are reproduced from parent organisms, and do not result from spontaneous generation came from careful experiments in makeshift laboratories of France's famed chemist and biologist, Louis Pasteur (1822-1895), at Ecole Normale, Paris. Mme. Pasteur waits patiently for him to complete an observation. From basic work begun in these laboratories came proof of the germ theory of disease, which transformed medical practice: vaccines for virulent diseases, including anthrax and rabies; solution of many industrial biochemical problems; and founding of the famed Pasteur Institute.

As a result of retrospective studies, a possible prediabetic history has gradually come to be recognized. If there is a history of glycosuria during pregnancy, or an unexplained intrauterine and neonatal fetal loss: if there is a history of hydramnios or a very large infant, then one should develop a high index of suspicion and employ glucose tolerance tests as a means of detecting subclinical diabetes—most likely to be demonstrated during the last trimester of pregnancy.

Should diabetes not be recognized during pregnancy, fetal embryopathy can point a finger of suspicion to diabetes in the mother. Stillborn infants[3] with enlarged islet areas turned out to be of mothers that had overt diabetes or abnormal glucose tolerance curves. This finding is significant also to the surviving offspring of diabetic mothers. Such offspring show a greater hyperglycemia during early neonatal life. The islet hypertrophy may in fact be a forerunner of permanent damage to islet reserve and may lead to a higher incidence of diabetes. Jackson[4] however, believes that if the child survives at all, it recovers completely.

If prediabetes is suspected on the basis of a family history, previous glycosuria or a suspicious obstetrical history, then the carbohydrate tolerance tests may reveal borderline or unequivocal diabetic curves. At this point, there are therapeutic measures which should be instituted such as premature termination of pregnancy, varying doses of insulin even in the absence of hyperglycemia, and strict dietary management designed to prevent excessive weight gain or to achieve a described weight loss. In principle this removes one of the burdens on the islets.

Kyle has repeatedly observed a return to normal carbohydrate tolerance following four to eight weeks of insulin therapy during pregnancy. This of course, serves to eliminate a burden upon the islets. A return to normal carbohydrate tolerance has also been reported by Fagan and Conn[5] in some asymptomatic diabetic patients following a period of tolbutamide therapy. Other means of sparing the islets such as correcting obesity and preventing future obesity must also not be neglected. Kyle reports an obese woman with a frankly abnormal glucose tolerance test who after weight reduction, sustained two pregnancies with no abnormality of any glucose tolerance test.

The increased interest in the relationship between pregnancy and diabetes will inevitably lead to greater numbers of newly discovered diabetics, many of whom will have a demonstrable abnormality of carbohydrate tolerance during pregnancy. These women should offer a unique opportunity for study. We still need to know more about the physiologic sequence of events occurring in the pregnant diabetic. We need more information about hormonal and non-hormonal antagonists of insulin, and about placental degradation of insulin.

L.H.N.

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Science Tools:
17. Lymphangiography

Palpation can be most accurate in the evaluation of superficial lymph nodes, and of course enlarged lymph nodes in the chest can also be demonstrated by roentgenograms. It is however quite tenuous in those nodes not accessible to direct touch. Thus in the retroperitoneal region which contains a large fraction of the entire lymphatic system enlarged nodes are often poorly or incompletely evaluated. Attempts to demonstrate enlarged nodes in this region by indirect methods prior to lymphangiography were often unreliable and subject to a wide range of interpretation.

One of the indirect methods traditionally used was opacification of the gastrointestinal tract, but node demonstration by this method is anatomically restricted to those areas in direct proximity to the bowel lumen such as the retroduodenal area and even there, the examination is only an indicator of large masses.

Intravenous urography has also been used frequently on the logical assumption that enlarged retroperitoneal nodes could produce ureteral displacement. But the nodes are separated by as much as 3 cm. from the ureters. Obviously early enlargement will remain undetected and once they reach a large enough size to replace the ureters, they are usually palpable through the abdominal wall without having to resort to urography to detect them.

The opacified vena cava is a more sensitive indicator of lymph node enlargement but only of those in the right paravertebral chain. All other nodes in the abdomen and pelvis remain unevaluated by this technique.

Lymphangiography developed in 1954[1] is at present the only method of direct roentgenographic

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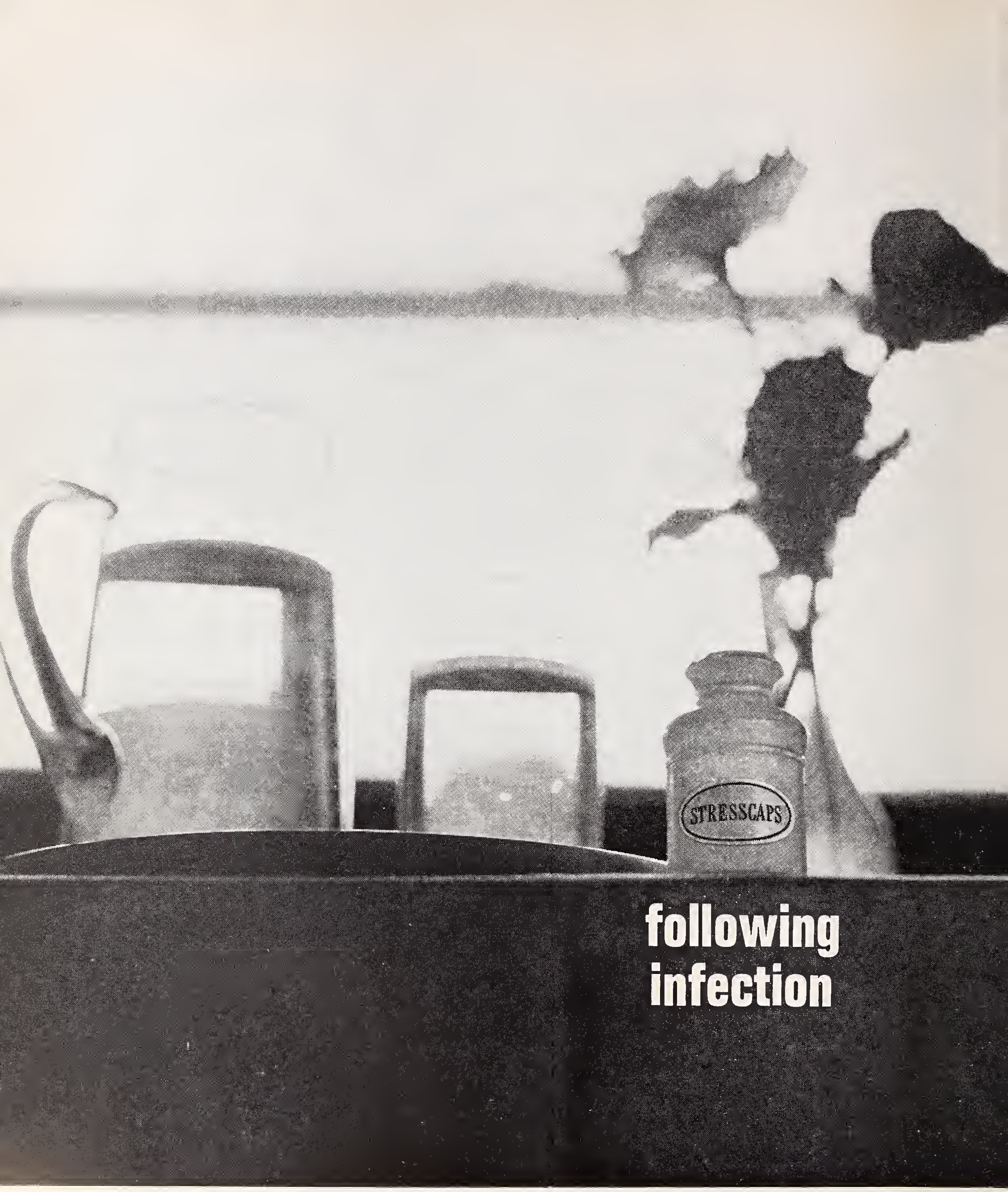

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visualization of lymphatics and lymph nodes. It is a relatively simple procedure which consists of the injection of radio-opaque iodized oil into the peripheral lymphatics of one or more extremities. For visualization of the retroperitoneal nodes, a lymphatic on the foot is injected. As drainage proceeds through the inguinal, external iliac and common iliac para aortic and retro caval nodes and the cisterni chyli, these structures are opacified and easily roentgenographed. The contrast material opacifies the lymphatic channels for the first twenty-four hours and becomes trapped in the nodes for periods up to one year. In Hodgkin's disease where prognosis is closely related to its initial anatomic staging, lymphangiography has definite merit as a clinical tool.

The roentgenographic appearance of contrast filled nodes in this disease is also characteristic for all lymphomas. The involved nodes are usually enlarged and plump, the normal fine reticular pattern is coarsened, the node capsule is preserved and although a node may be markedly enlarged, its efferent lymphatics will usually not be obstructed. These changes are quite specific and differ markedly from a carcinomatous metastasis, or inflammatory process, making differentiation reasonably simple and reliable. The long-term retention by the nodes of contrast material, makes it possible to detect interval enlargement of retroperitoneal nodes as well as a decrease in size to normal when treatment has been successful.

Lee, Nelson and Schwarz[2] have employed lymphangiography in a series of patients with malignant lymphomas and compared the results with those obtained by intravenous urography and inferior venacavography. While lymphangiography demonstrated undetected disease in an impressive number of patients of all stages, inferior vena cavography demonstrated undetected disease in only half, while intravenous urography was virtually non-contributory towards recognition of latent node involvement. In lymphosarcoma most cases first classified as being local were found to be generalized. In Hodgkin's disease two-thirds of patients thought of as being local were general. The localized ones however could be eradicated by appropriate treatment, whereas the lymphosarcomas could not. This suggests that Hodgkin's disease can begin in a single site and at this stage is potentially "curable."

It is clear that there is a need for a more elaborate work-up to determine the true extent of Hodgkin's disease. Since lymphangiography is a quite benign procedure, its routine use is indicated in the initial evaluation of the extent of abdominal involvement in Hodgkin's disease. The startling data provided by Lee, Nelson and Schwarz showing positive retroperitoneal nodes in two-thirds of the patients unsuspected of having such involvement forces us to revise our thinking in regard to case selection for vigorous treatment. Obviously if aggressive treatment is to be employed in cases with "localized" adenopathy, the true extent of the adenopathy should first be demonstrated by lymphangiography. Only then can we ever judge the efficacy of therapy, since otherwise patient selection will color the results obtained.

L.H.N.

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The Role Of Coronary "Vaso-Dilator" Therapy In Angina Pectoris

There is a close analogy between pain in an extremity with a reduced arterial blood supply and the pain in angina pectoris in which atherosclerosis of the coronary arteries has impaired the blood supply to the myocardium. In each case there is no pain at rest or even after a given degree of activity unless the demand for blood required to sustain the activity exceeds the amount of blood flow attainable in a given region. This concept implies that at rest the coronary blood flow per unit weight of the myocardium is normal but that during exercise, the areas supplied by diseased coronary arteries do not receive as much of an increase in blood flow as is required to meet the metabolic demands. From such a pathophysiologic concept it should follow that when a vaso-dilator like nitroglycerin is administered to such patients, their relief of pain is due to increased coronary blood flow to the impaired region, if the pressure is sustained unchanged.

Hemodynamic studies after the administration of agents used therapeutically for angina pectoris have led to disturbing and conflicting observations. On the one hand the effective drugs like nitroglycerin and the tetranitrates did not increase coronary blood flow or oxygen utilization, while such drugs as hydralazine and persantin, which do increase coronary blood flow may even precipitate attacks of angina pectoris.[1] Thus the effect of a drug on coronary blood flow seems not to be related to its value in relieving angina pectoris.

Pathologic studies show that atherosclerosis is the basis of angina pectoris. Contemplation of this hard fact must raise the question of how any agent can produce dilatation of a rigid tube that presumably supplies blood to the pain producing area in the heart. When this is taken together with the fact that effective agents in fact do not increase the coronary blood flow, it becomes obvious that we must search for some other mechanism to explain the benefits of the nitrites.

Originally when Lauder Brunton in 1867[2] introduced amyl nitrite into the therapy of angina pectoris, he presumed that its effect depended upon its lowering of arterial pressure and thereby reducing cardiac work. Both nitroglycerin and long acting nitrates do lower blood pressure, reduce the cardiac output and left ventricular work.[1] Other agents like the thiazides, if they lower the blood pressure of hypertensive patients, also can lead to reduced incidence of angina pectoris. The ganglion blocking agents significantly reduce cardiac work and severity of angina pectoris. Hypothyroidism at times reduces the severity of angina pectoris even though there is a known decrease in coronary blood flow. An amine oxidase inhibitor relieved angina pectoris without any effect on cardiac rate, blood pressure or cardiac output. Finally, we know that a subject very quickly gains relief from anginal attacks by cessation of effort with motionless standing. In this way blood is pooled in the dependent portions of the body, the cardiac output is reduced and the cardiac work and myocardial blood flow are brought into balance. We are inevitably led to the concept that relief of angina pectoris is obtained not by increase in coronary blood flow but by the reduction of ventricular work into a range which can be supported by existing myocardial circulation.

It is apparent that such a concept must influence our general philosophy concerning our use of coronary dilators in subjects with angina pectoris. This is especially necessary when we reflect that pharmacologic vaso-dilator agents will act on the readily distensible vessels and that rigid vessels which depend for their perfusion solely upon the pressure to which they are exposed will inevitably receive a reduced flow during hypotension.

Our attention is therefore directed towards the biologically available vaso-dilators such as adenine-nucleotides, dopamine, catecholamines and bradykinin which increase coronary blood flow considerably more than any of the agents which have been available clinically. We know that when a cell is compromised by ischemia then lactic acid, carbon dioxide and the biologic vaso-dilators diffuse into vessels of the injured area where they can do the most good. This will permit collateral channels to grow into the area which is rendered ischemic. Thus the most potent stimulus to the development of collateral circulation is probably graded ischemia, and therefore carefully controlled exercise. In fact, the data which relate the incidence and severity of coronary artery disease to physical activity show that the heavier the work a subject does, the less extensive is atherosclerotic heart disease and the smaller and less frequent are scars in the myocardium.[3]

If we are to rethink our treatment of angina pectoris, we must realize first that agents that temporarily reduce cardiac work probably will serve the patient best and that long acting vasodilators by acting on distensible vessels are likely to reduce the pressure head available to diseased vessels, and through reduction of cardiac work over an extended period might reduce the normal stimulus to the growth of new vessels. It is different immediately after myocardial infarction in experimental animals where long acting nitrites reduce cardiac work and permit faster healing.[4]

In general we know that the goal of therapy for coronary atherosclerosis should be the prevention of progression of the disease by eliminating the factors that make the patient "coronary prone" such as obesity, hypertension, hypercholesterolemia and smoking. A second goal of therapy for this process should be the re-establishment of normal lumen in the diseased vessel, an ideal extremely difficult to attain at present. A third goal of therapy is to employ graded exercise to assist in the slow and laborious process of the development of a collateral circulation. During this period the physician will consider vaso-dilator therapy as supplying symptomatic relief and then only for as short a time as possible in order to relieve pain through temporary alteration of the discrepancy between demand and supply in the coronary circulation.

L.H.N.

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The Development Of Immunologic Responses By The Mammalian Fetus

The fertilized ovum is probably incapable of any specialized activity other than cell division. Continued proliferation from this simple beginning leads to the differentiation of cells, organs and systems, capable of every form of specialized biologic function. Before a given stage of development, the

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organism is unable to perform certain of these functions. Silverstein[1] has undertaken a study of certain aspects of fetal immune responses, how they seem to grow. Out of these studies have come a fresh point of view, namely that the development of immunologic competence not only furnishes the animal with an impressive mechanism for defense against infection, but that this very immune mechanism itself may provide the very basis for the development of disease as well.

He performed his studies in fetal lambs by immunizing them at different ages and with a variety of different antigens. Apparently diphtheria toxoid, Salmonella typhosa and bacillus Calmette-Guerin (BCG.) do not stimulate the formation of detectable circulating antibodies at any time during fetal life and it is only relatively long after birth that animals begin to respond to these antigens in the characteristic manner. However, other antigens like bacteriophage virus stimulates active antibody formation in the fetus as early as thirty-five days of gestation. At 65-70 days, the fetus began to produce antibodies to ferritin but to egg albumin only after 125 days. In short, immunologic maturation is a slow stepwise development that allows the fetus and newborn to respond first to one then to another and ultimately to all antigens. Thus, before a given age, the immunologic mechanism of the fetal lamb does not appear to recognize certain substances as antigens. The question thus arises whether the fetus can develop a disorder if exposed to an antigen before it has developed a capacity to react immunologically to it. There are two diseases which illustrate that when the host for some reason cannot respond to the pathogenic organism that disease may not ensue despite infestation with the pathogen.

Lymphocytic chorio-meningitis (LCM) is one of these. It is a naturally occurring viral disease in mice. If a laboratory animal is inoculated with it, a severe and often fatal illness ensues. But the virus may persist in the blood and tissues of certain mice without causing signs of disease and the disease cannot be evoked in these animals by infection of additional virus. These infected but not diseased mice have been shown to have received the virus in utero from their non-lethally infected mothers. Thus infection with virus during early developmental stages before the immune apparatus is developed, served to render the mouse henceforth resistant to the disease. It is as if immunologic tolerance of the virus had occurred, and with the establishment of tolerance and persistence of the virus in the mouse, the virus would never thereafter be able to induce an immune response in the host. Here is a situation where inability to develop an immune response to a viral pathogen appears to render that pathogen innocuous while the "proper" functioning of the immunologic apparatus spells disease in the adult. The LMC disease in mice then would appear to be not so much a "viral disease" as an immunologic disease of the host triggered by the virus. On the other hand, when the immune mechanisms are non-existent, there is absence of a disease process.

We have a similar situation of absent immunologic factors in the case of human fetal infection with German Measles during the first trimester of gestation. The virus seems to interfere directly with cellular metabolism and organ development resulting in congenital deformity but no inflammatory process. A similar situation exists with Treponema pallidum infection. Organisms have been reported in younger fetuses without pathologic picture of the disease. It is only in fetuses of five to six months of gestation that the typical disease develops. Here again a pathogen appears to be innocuous and failing to incite a disease process before the five-six month period of gestation, whereas immunologic competence can lead to disease.

The acquisition of immunologic competence by the human fetus and its intra-uterine formation of antibodies may have serious consequences in another way. The close proximity of the fetus to its mother makes it possible for her to participate in the general fetal response to infection. The normal human fetus does not form gammaglobulin but acquires it from the mother through the placenta. Only an infected fetus is stimulated to an active formation of gammaglobulin on its own behalf. Any antigen in the fetus lacking in the mother such as paternally determined red cell antigen (Rh, A or B), can cross the placenta, and induce an antibody response in the mother. Then the passage of these maternal antibodies across the placenta leads to an immunologic reaction with and destruction of the fetal red cells causing erythroblastosis fetalis. Here the fetus is not actively engaged in an immune response but suffers passively from the destructive effects of its mother's antibody on its own paternally derived antigen.

In a similar way a fetus if it can respond to an infection with the formation of paternally determined gammaglobulin with antigenic properties not possessed by the mother, will cross the placenta and produce an antibody response in the mother. Again the maternal antibody crossing back over the placenta to the fetal circulation might lead to an allergic reaction in the fetus in a manner analogous to that accompanying erythroblastosis fetalis.

The principle points emerging from Silverstein's studies are three. One is that the fetus in some species may engage in immunologic response when suitably stimulated with antigen but it does not appear to develop its immunologic competence all at once but responds to some, very early in gestation, to others only later, and to others only sometime after birth. The nature of this apparent step-wise maturation is not clear but its existence poses interesting theoretical questions. The last point is that although the acquisition of immunologic competence presents the fetus with an efficient mechanism of defense, it is also a disease producing mechanism as well. For certain organisms can only cause disease when they can stimulate an immune response in the host. When the host has not yet developed this response, and is nonreactive, then otherwise pathogenic agents remain innocuous to the host.

L.H.N.

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Circadian Cycles In Man: The Dream Cycles

Until recently most of our knowledge about the dream state (D-state) was derived from psychoanalytic investigations. Out of Freud's great work on dreams came the recognition that dreams had a meaning in terms of the unconscious wishes of the dreamer.[1] He recognized that during the D-state the Repression mechanism fails and unconscious material is brought to the surface as a form of wish fulfillment, which, however, may be disguised by the "dream work" so as not to do violence to the person's waking self. It has some resemblance to the state of hypnosis in which there is also a failure of repression allowing much unconscious material to bubble to the surface.

However, knowledge of the neurophysiologic activity which underlies and accompanies the D-state is a recent development. To be sure infants and children during sleep often show grimaces or smiles or gnashing of teeth as evidence of active psychic processes going on. It has also been recognized that some exciting dreams are accompanied by signs of terror, fast pulse and sharply elevated blood pressure. In fact MacWilliam[2] pondering the sudden deaths during sleep of patients with heart disease, speculated after taking some random recordings on patients, that it might have been caused by elevations in blood pressure associated with dreaming.

The real breakthrough in our knowledge of the neurophysiologic activity during dreaming came in 1953 when Aserinsky and Kleitman[3] discovered in a series of original studies that four or five periods during an average night's sleep were characterized by rapid eye movements (REM), as well as an electroencephalogram (EEG), which resembled not that of sleep but of the waking state. Their subjects when awakened reported they had been dreaming. Their studies further revealed that sleep was cyclical with regular periodic emergence from deep to light sleep (D-state) with REM and EEG changes occurring predictably four or five times a night and with fairly regular periods of deep sleep in between. The first such period of the D-state never occurs under ordinary conditions until fifty to ninety minutes after the onset of sleep. The D-state periods last not for brief moments but at specified periods during the night and total at least ninety minutes in an average night's sleep of eight hours.

Aserinsky and Kleitman's studies on the D-state in human beings, unrecognized until 12 years ago, has now been described in a large number of mammals from the opossum to the monkey and chimpanzee, and it does not require too speculative a leap to assume that the D-state is found in all mammalian species since it has been found in at least eleven studied so far when proper techniques are used. It is even possible that birds may have a very brief period of D-state. To be sure there are differences between the various mammals studied in such properties as the amount of hippocampal theta rhythm, increase or decrease in mean pulse rates and others but the similarities are so great as to warrant the conclusion that the D-state is a biological rhythm homologous to all mammals. The amount of time spent in the D-state varies considerably from about 2 per cent of total time asleep in the adult sheep to 20-60 per cent of time asleep in the adult cat. Apparently there is a rough relation of cycle length with life-span, since the larger animals with a longer life-span and a lower metabolic rate tend to have longer cycles.[4]

In man, cat and sheep the very young always spend more time in the D-state than the adult of the species. A young human adult spends 20-25 per cent of his total sleep time in the D-state decreasing to about 15 per cent in older subjects. As one moves to young children the D-state occupies 30-40 per cent of the sleep cycle and in neonates the D-state is 50 per cent and even higher in premature infants. The EEG is not a very reliable index in neonates so that the presence of the D-state is judged mainly by eye movements, loss of muscle potential, especially in the anti-gravity muscles, pulse and respiratory changes. Since the D-state is greatest in the very young when well-formed dreams as adult human beings know them are hard to imagine this state must be a very primitive one that later matures into "waking" as well as "nondreaming sleep."

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Dosage
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Precautions
Before prescribing, the physician should obtain a detailed history and perform a complete physical and laboratory examination, including a blood count. The patient should be kept under close supervision and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools. Regular blood counts should be made. The drug should be used with greater care in the elderly.

Warning: If coumarin-type anticoagulants are given simultaneously, the physician should watch for excessive increase in prothrombin time. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea and sulfonamide-type agents and insulin. Patients receiving such concomitant therapy should be carefully observed for this effect.

Side effects
The most common side effects are nausea, edema and drug rash. Infrequently, agranulocytosis, generalized allergic reaction, stomatitis, salivary gland enlargement, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug. Thrombocytopenic purpura and aplastic anemia are also possible side effects. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently.

Contraindications
These include: edema, hypertension, or danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. Because of the increased possibility of toxic reactions, the drug should not be given when the patient cannot be seen regularly, when the patient is senile, or when other potent chemotherapeutic agents are given concurrently. Large doses of Butazolidin® alka are contraindicated in patients with glaucoma.

Note: The physician should be fully aware of dosage, precautions, side effects and contraindications as contained in the complete prescribing information.

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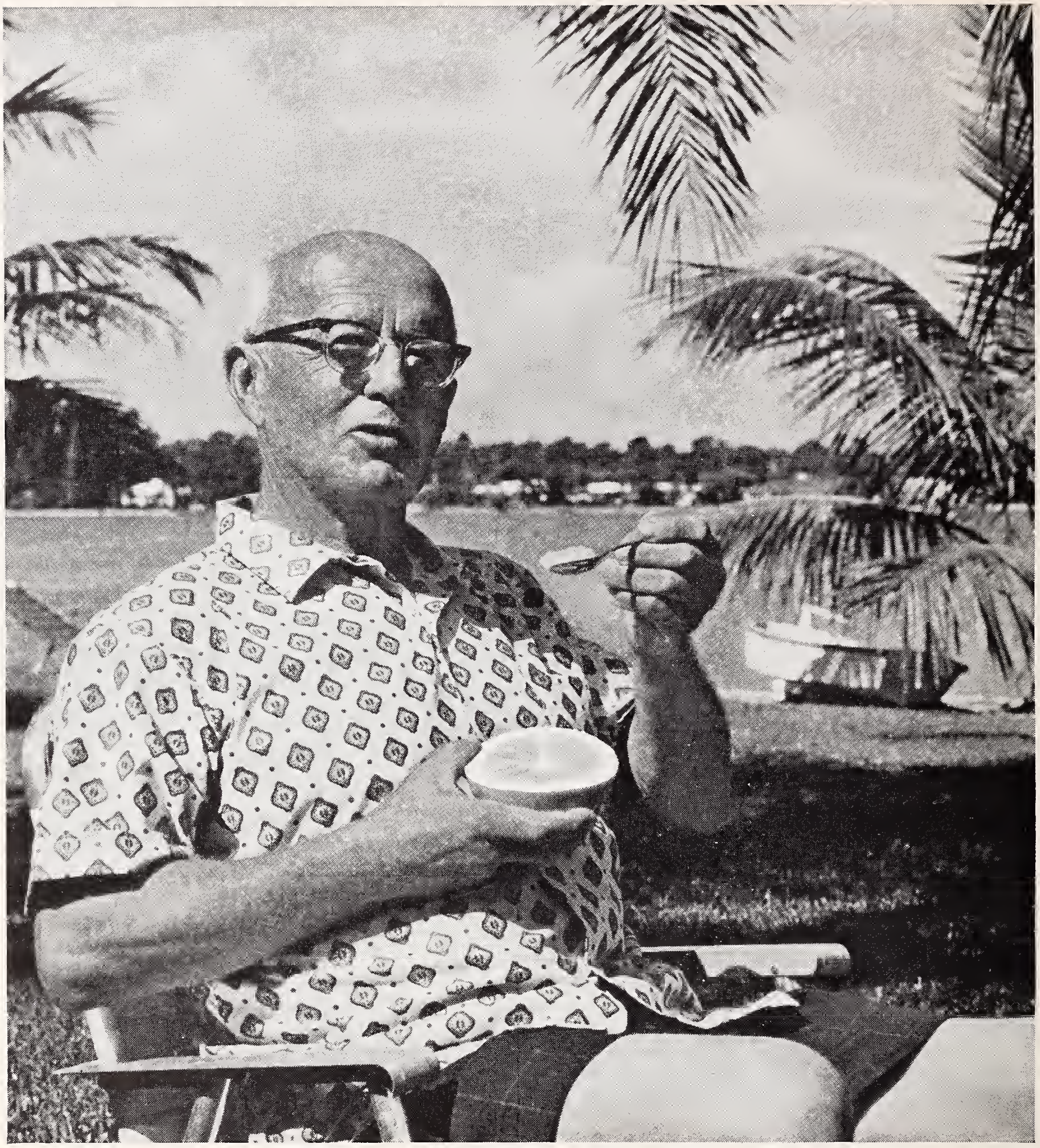

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During the D-state as Hartman points out many autonomic phenomena are activated such as changes in pulse rate and blood pressure, as opposed to the non-dreaming sleep during which these parameters remain at a steady low level. During dreaming the human male experiences full or partial penile erections while the phenomenon is absent during non-dreaming sleep. These differences between the D-state and the non-dreaming sleep are very well marked so that in many respects the D-state is more active even than quietly lying in bed awake, bearing more resemblance to an active waking state.[5]

Two types of experiments have served to clarify the neurophysiologic mechanisms underlying the D-state.[6] One is the classic technique of transection of the brain from above downward. A decorticate animal still shows recurrent D periods. Section in the upper pons of animals, leaves the D-state intact with respiratory evidences and muscle potential dropout. However, when transections are made at the lower border of the pons the D period disappears. Thus it appears that the D-state is initiated by a center in the pons one of the most primitive parts of the brain. The pathways whereby this center transmits impulses upward to achieve activation of the cortex and downward to achieve inhibition of muscle potential and decreased sensitivity of the motor neurons have as yet not been established.

The fascinating problem of course is what need does the D-state subserve: Robert[7] in 1886 wrote that dreams are a safety valve of the mind allowing the tensions accumulated during the day to be discharged. He believed that a human being deprived of the possibility of dreaming would have to become mentally disturbed after some time. Freud in his classic studies dealt only with the psychic experience of dreaming not with the peripheral physiology of the D-state unknown at the time and which is also involved in the total process. In all experiments on dream deprivation, it is both the psychic and the peripheral activities which are stopped since the subject is awakened the moment objective evidence of the onset of the D-state appears in REM, EEG and muscle potentials.

In Dement's[4, 8] studies on dream deprivation in humans he found that after five such nights the subjects made increasingly frequent attempts to have D periods. If they were awakened 5 times the first night to prevent the D period, they required 30 awakenings the fifth to prevent the subject from dreaming and when the experiment was terminated the subjects sort of caught up on their D-state loss by living through prolonged D states. At the end of the experiment the subjects became unusually tense and irritable acting as though they had been deprived of a great deal of sleep, although their (S) sleep periods were not much shortened.[9] These experiments certainly suggest a "need for dreaming." These observations have been amply confirmed.[10, 11, 12]

When Dement[13] prolonged the duration of dream deprivation from 5 to 15 days in three subjects, he found all the effects mentioned above but to an increased extent. It became hard to awaken the subjects toward the end of the fifteen day period. The recovery period showed a few nights of extremely high D values up to 60 per cent of total sleep. Perhaps most interesting is that not only did the subjects become irritable during the daytime but 2 of them showed distinct personality changes, one in a paranoid direction and the other in the direction of levity and giggling, quite unusual for the subject. These experiments completely fulfill Robert's original prediction, that there is a definite need for the D-state and its deprivation can lead after some time to serious mental disturbance.

We are reminded of what can happen to man when desynchronization occurs in some of the other circadian rhythms such as the light-dark cycle.[14] In the dream cycle we are face to face with one of the most fundamental mechanisms involving both psychic and physiologic events in animals as well as in man. The dream cycle is obviously necessary for psychic and physical health. Its disruption produces serious mental disturbances. Further studies will probably also reveal that dream deprivation will result in serious physiological as well as psychological consequences.

L.H.N.

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Disseminated Intravascular Coagulation; The Basic Pathology In Diseases Of Hypersensitivity

It is now recognized that the phenomenon of in-vivo blood coagulation occurs whenever the circulating blood is exposed to a wide variety of agents from hemolyzed red cells, particulate matter, viruses and antigen-antibody complexes.[1] In acute and massive clotting an immediate consequence is the sudden appearance of shock and even the development of a hemorrhagic diathesis, the explanation being the depletion of components of the blood coagulation by the using up of fibrinogen and platelets in the widespread formation of the thrombi. The consequence of this obstruction of arterioles, capillaries and venules by fibrin thrombi is development of ischemic necrosis of a widespread nature in kidney, adrenals, pancreas, intestinal mucosa and almost any other organ.

The picture given above fits exactly the physiology and pathology of anaphylactic shock. The picture can be reproduced exactly in sensitized animals by injection of an antigen. There results a drop of systolic pressure, a rise in pulmonary pressure. The lungs reveal widespread thromboses of pulmonary capillaries.[2] These thrombi and the accompanying spasm of the pulmonary vascular bed results in acute cor pulmonale. If the same antigen is instead injected into a mesenteric vein the same pathological picture of thrombosis with focal necrosis occurs in the liver. A study of the thrombi reveals fibrin platelets and antigen antibody complex. If, however, heparin is given before antigen is injected no thrombi will form.[3] It is thus clear that antigen-antibody complexes fire off blood clotting mechanism in-vivo resulting in deposition of fibrin thrombi chocking off circulation to tissues which when it happens in the lungs is termed anaphylaxis.

There are two well known experimental phenomena in which coagulation caused by an antigen antibody complex can be studied locally. One is the Arthus phenomenon which occurs when an antigen is injected subcutaneously in an animal that has circulating antibody. There develops a hemorrhagic necrosis of the skin in the region where antigen reaches tissues. Here the process is the same as in anaphylaxis except that the intravascular clotting is not disseminated but localized to sites where antigen and antibody comes in contact.

The Schwartzman reaction is also localized and is produced in reverse. First there is an intracutaneous injection of bacterial endotoxin and this is followed in 24 hours by an intravenous injection of the same toxin. Here again hemorrhagic necrosis appears at the prepared site and reaches its largest size 3-6 hours after the intravenous injection. The histology of the lesion is identical to that found in the Arthus phenomenon and anaphylaxis. If you wish to produce a generalized reaction it can readily be produced with two properly spaced intravenous injections of bacterial endotoxin. It is clear then that antigen antibody complexes can induce thrombi in lungs and liver in anaphylaxis, thrombi which also characterize the Arthus and Schwartzman reactions.

The question of course arises whether intravascular coagulation also occurs in man. McKay has brought together a wide variety of evidence to show that hypersensitivity in man does occur and that in many instances the same pathological process of intravascular clotting can be shown to occur. He reports a patient with pregnancy and disseminated lupus who died after a cholecystectomy. There were microscopic thrombi throughout the viscera and small infarcts everywhere. She also had abnormally large fibrin deposits in the placental vessels, in the glomerular capillaries, alterations in the hemostatic mechanism of the circulating blood and evidences associated with the pre-eclamptic state.

Harvey[4] in a survey of some of the well established manifestations of disseminated lupus presented unequivocal evidence for the occurrence of widespread clotting probably a consequence of the development of antigen antibody complexes. He found renal lesions closely resembling those of glomerulonephritis. Lesions were produced by Dixon[5] after multiple injections of antigen into animals over long periods of time. Similar lesions of disseminated intravascular coagulation were demonstrated by Gitlin to occur also in glomerulonephritis.[6]

Periarteritis nodosa in one group is characterized by lesions in small venules, arterioles and arteries

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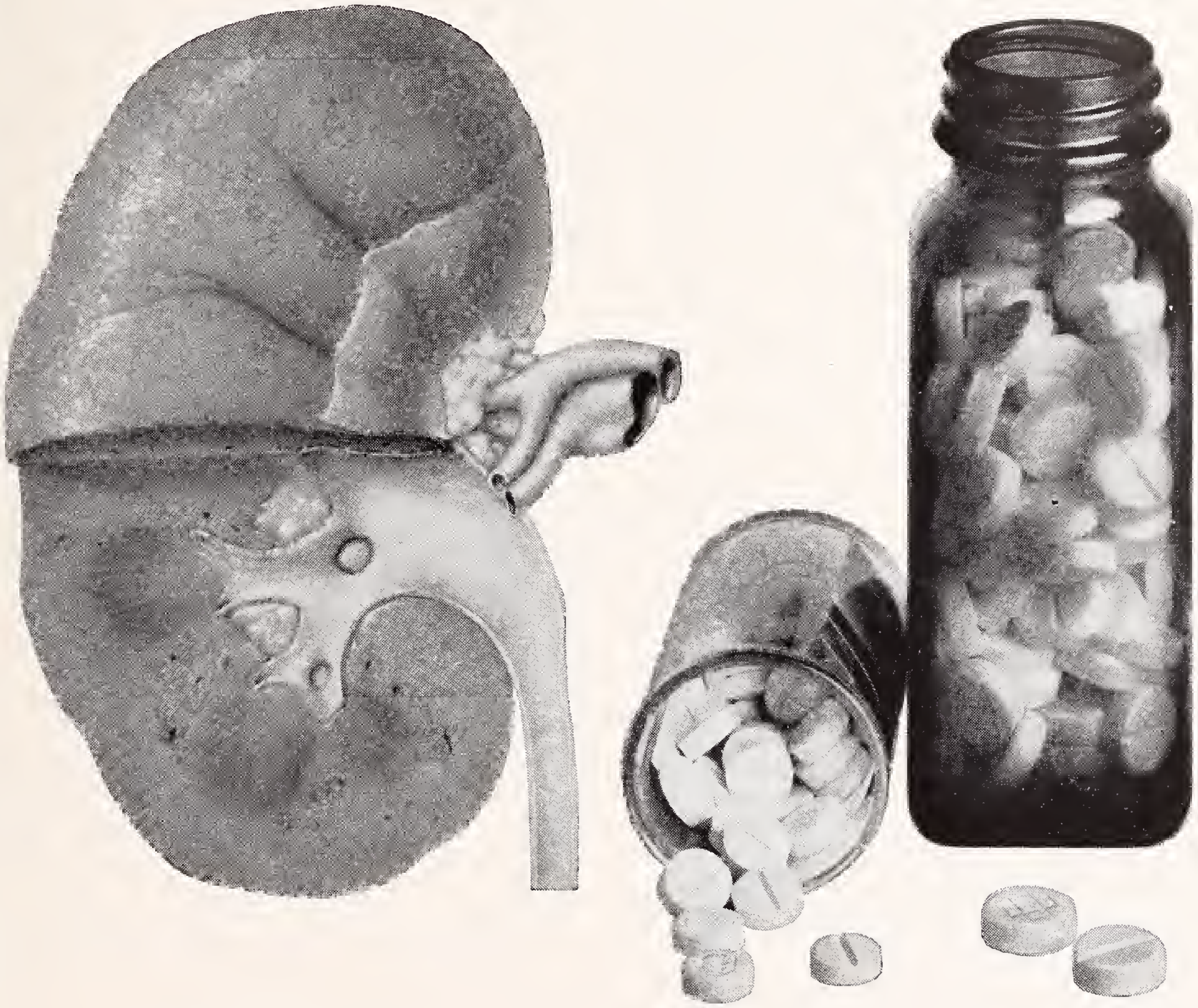

understanding... precedes development

The development of chlorothiazide and probenecid were events of major importance, but perhaps even more important for the future was the Renal Research Program by which they were developed. When Merck Sharp & Dohme organized this program in 1943, it was expressing in action some of its basic beliefs about research:

- Many problems connected with renal structure and function were still undefined or unsolved. The Renal Research Program would begin its basic research in some of these problem areas.
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For example, the Renal Research Program put fifteen years into this search before chlorothiazide became available. But because these years had first led to a greater understanding of basic problems, the desired criteria for chlorothiazide existed before the drug was developed.

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Concentration	*Total Number of Cases*	*Much Improved***	*Improved**	*Unimproved*	*Aggravated*
10%	63	39	14	6	4
5%	30	16	10	4	0

*** Denotes resolution of at least 50%.*
** Denotes resolution up to 50%.*

DURATION OF TREATMENT

Number of Cases	14	24	18	14	9	3	7	4
Duration (weeks and months)	2 wks.	1 mo.	2 mos.	3 mos.	4 mos.	5 mos.	6 mos.	8 mos.

The types of psoriasis included (parentheses indicate number of cases) ; Generalized (31), Palms and soles (7), Legs and feet (18), Scalp and ears (27), Groin (3), Neck (5) and Vulva (2).

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Availability: Keranil ointment is available in one ounce jars as a 10% concentration of choranil in a polyoxyethyene carrier.

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Literature and samples on request.

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of many viscera, pulmonary, splenic and renal vessels and here we also find necrotizing glomerulonephritis. In another form periarteritis reveals presence of acute and healing vascular lesions of middle sized arteries with segmental necrosis of vessel walls ultimately forming thromboses. We know that periarteritis is associated with drug allergy, an antigen-antibody reaction, and therefore it is not surprising that its pathological appearance should resemble so closely the experimental vasculitis produced by antigen antibody complexes.

McKay points out that rheumatoid arthritis is also associated with vascular lesions with thrombosis. There is segmental necrosis which is found inside the nodule arteries leading to necrosis which closely resembles those in periarteritis nodosa and is a secondary reaction to vasculitis. That disseminated intravascular coagulation may occur in rheumatoid arthritis was well demonstrated in a case reported by Castleman.[7]

Rheumatic fever has been carefully studied by VonGlahn and Pappenheimer[8] and in 20 per cent of cases they found intravascular thromboses in the form of deposits of fibrin in the walls of arterioles and sinusoidal capillaries. They found involvement in the pulmonary vessels, splanchnic vessels and vessels of the extremities. There were platelet thrombi in the capillaries and venules of the myocardium containing Aschoff bodies which may play a role in the genesis of rheumatic myocarditis.

Intravascular clotting has also been documented in dermatomyositis by Boylan and Sokoloff.[9] Most of the vessels affected were small arteries and skin arterioles striated muscle and those of the gastrointestinal tract. Recent lesions were composed of platelet thrombi obliterating the lumen of small vessels in the organs mentioned. Older lesions tended to resemble those seen in scleroderma. In this disease also intravascular thrombosis occurs in microscopic vessels of the hands and kidneys. In the hands it is associated with the Raynaud's phenomenon, in the kidneys, with malignant hypertension.

It is clear that disseminated intravascular coagulation can be produced experimentally by the use of antigen antibody combination. Under these conditions it occurs predominantly in the sudden acute variety as is found in anaphylaxis, in the Arthus phenomenon and in the local and generalized Schwartzman reaction. The similarity between these findings and hypersensitivity states in man is very close. The pathologic picture in disseminated lupus, glomerulonephritis, periarteritis nodosa, rheumatoid arthritis, rheumatic fever, dermatomyositis and scleroderma is also one caused by intravascular thrombosis and tissue necrosis and the parallelism in the experimental situation and the clinical states makes it extremely likely that in human diseases discussed above the basic pathology can be traced also to the antigen-antibody provocation, leading to intravascular thrombosis either localized as is found in the Arthus or Schwartzman phenomenon or widespread as occurs in anaphylaxis.

L.H.N.

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Obesity As A Social Problem

There is no doubt that the obese individual becomes this way through ingesting excess calories; this is, excessive for his behavioral pattern, his biochemical make-up and his physiological requirements. Our recognition that obesity is a hazard has led to the concept that its presence is abnormal. To be sure it is always unhealthy but it is not always abnormal. The reason for this is that in certain ethnic backgrounds and social classes, there are commonly held beliefs, shared group values and attitudes, certain types of social participation, which lead to obesity and when present is not considered abnormal.

Jaffe[1] reports that first generation Italian mothers regard obesity in their children as protective against tuberculosis. The diet had a high fat content and in this ethnic group obesity was significantly above average. This would be an instance in which social mechanims encourage obesity.

Custom also plays a role in obesity. Czech cooking habits are different. These people go out more on Sunday, visiting. It is considered impolite to refuse a second or even a third helping. As a result in the first generation, lower social-economic-status (SES) 41 per cent were obese. On the other hand, in Poles, Russians and Lithuanians,[2] with different food habits and social customs, obesity occurs in only 18 per cent.

But SES changes and custom does also, from one generation to the next, and Goldblatt, et al.[3] point out that new values are adopted as one goes from the 1st to the 4th generation in America and affluence increases. The adopting of new values depend upon the length of the family exposure to those values as measured by the number of generations in the U.S.A. and by the amount of pressure to conform to these values which seems to be a function of the individual proximity to the upper classes where the values are most strongly exemplified. With regard to obesity what are these values?

Our popular culture portrays the image of the slim attractive female, as for example, the motion picture star, television personality, women in advertisements, fashion models and fashionable clothes themselves, all reflect the definition of the beautiful female as one who is thin. This ideal of beauty is firmly rooted in our culture and exerts its impact on the body weight of persons in the different elements of society by at least two mechanisms.

One may be a selection process which could operate so that in any status-conferring situation, such as a promotion at work or marriage to a higher status male, thinner women may be preferentially selected over their competitors. Another may be an acculturation phenomenon. An individual adult whose obesity is the result of dietary habits and customs in the first generation in America will perceive that among her new peers more emphasis is placed on being slim than was true in her old environment. She is likely therefore to make a greater effort to lose weight than she might previously have done. If these theoretical considerations are true then one should find increasing thinness among both males and females as the generations in America increase from 1 to 4 and as SES increases. Here we should find that social factors discourage obesity.

It was this kind of study by Goldblatt, et al. that was carried out in midtown Manhattan as a by-product of a comprehensive survey of the epidemiology of mental illness. 1,600 adults, 690 males, 970 females, between ages of 20-59 were studied. The population was divided into three categories; obese, 34-44 per cent above desirable weight; normal; and then (13-16 per cent below the desirable weight).[4] Finally, the SES was also taken into account.

The prediction from the theoretical considerations mentioned above was clearly verified namely that obesity can be correlated with the SES and is inversely related to the number of generations in this country. Obesity was found to be six times more common among women of the lower SES than among those of higher status. Among women there was a sharp drop so that there were four times as many thin women among the higher status as there were among the low status.

Among men a similar trend was uncovered. Obesity was three times more common in the 1st generation as compared to those in the fourth. The only difference between men and women was, that while women moved towards thinness, men moved from obesity to normal. This same attempt to study obesity as a social problem was carried out by Pflanz[5] in Germany and the results were found to be similar. The lesser importance of social factors as related to body weight among men as contrasted to women may arise from a lesser importance that society attaches to the physical appearance of men. It may of course also be due to a different definition of culturally desirable weight for them. Somehow our advertisements exhort men to avoid both thinness and obesity. It is the normal weight categories which correlate highly with upper SES in males.

It thus appears that while in certain segments of society obesity is not looked upon as a handicap, in middle and upper class women obesity becomes a severe social liability. It would be extremely helpful for us to know how some people develop the attitude that a slim appearance is very important. Why is it that certain subgroups have a higher incidence of this belief than others? How is this belief inculcated? At what age does this appear in differing social classes? What are the differing implications of overweight for the different social classes?

Some answers to these questions have been suggested above. Our attack on obesity as an individual problem, has not been overly successful. The recognition of the significance of social factors in obesity may help to lay the foundation for a new approach to control obesity by effective public health programs. It will also emphasize to the physician the need of taking social factors, customs and ethnic origin into account as he grapples with an admittedly difficult problem.

L.H.N.

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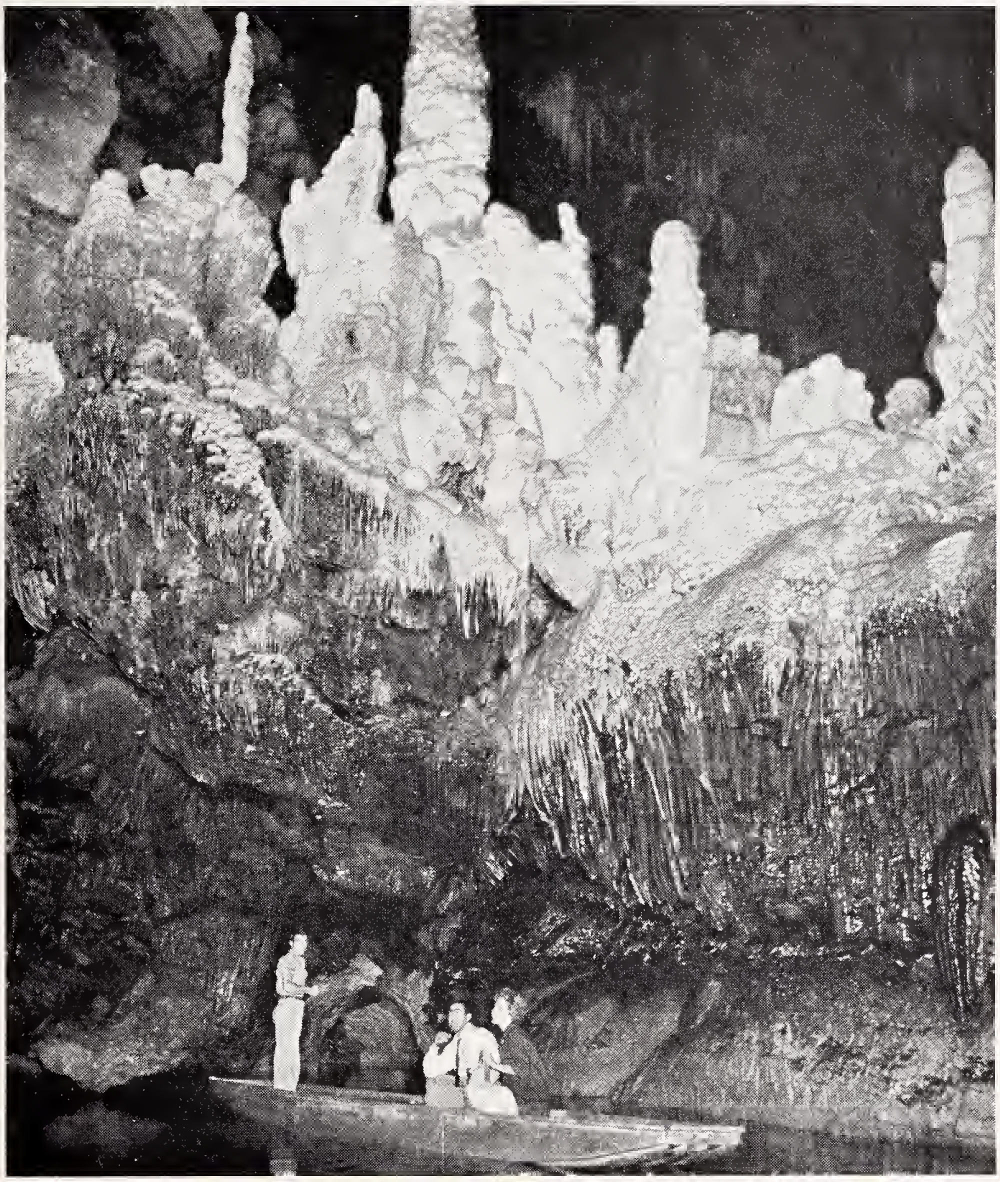

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Who Is Suggestible?

There is a widespread belief that suggestibility is inversely related to education, that the person with more education is less receptive to suggestion than the less educated one. This takes no account of the high degree with which suggestion of ideas however false but appropriately applied, has been accepted by whole nations. It also takes no account of the methods of the educative process itself in which suggestion plays a major role in "learning." For most learning at least in the lower schools involves suggesting "facts" or "truths" to the immature mind by the teacher.

Suggestibility is a function of the mind which determines the acceptance or rejection of suggestions. We know that some people accept suggestions readily, others less readily and there are graduations from the highest to the lowest suggestibility. It is only natural that this important function of the mind should have been regarded as a fairly static and fixed facet of the personality.

However, it is not that simple. In every day life people are unsuggestible in the area of their business or professional activity. These same people may be decidedly suggestible concerning health and in this area may give consistent response to suggestion. There comes to my mind a captain of industry who made millions but who succumbed to a cancer quack when his wife was afflicted with carcinoma of the liver. This treatment was suggested to him by a "friend."

Patients who are tense, anxious and inclined to be restless, are very often resistive to hypnosis by suggestion of relaxation, but such patients can be easily hypnotized by another method. Some patients are resistive to one therapist and easily hypnotized by another even with the same technique. Often this is not due to the skill of the therapist since at times a skilled therapist will fail and an unskilled one succeed. Clearly the personality of the "suggestor" can have an effect on the suggestibility of the patient. The reasons for such variation must be sought for in the operation of dynamic factors in the mind rather than in aspects of a fixed personality trait. For instance Meares[1] who has had wide experience with medical hypnosis found that suspicious and paranoid persons are typically very suggestible in the area of their suspicion and paranoid ideas, but are often unsuggestible in other areas. Such cases reveal and make apparent that there are psychodynamic determinants of suggestibility. Doubtless such determinants operate more or less in all people as well. The physician who employs suggestion in his patients can benefit from understanding these psychodynamic determinants.

We have seen that an individual may accept a suggestion from one person and reject the same suggestion from another, be easily hypnotized by one therapist and be refractory to another. The affective relationship between the two people may be the deciding factor. The business man is unsuggestible in his business affairs because here he is on guard and deals with matters at an intellectual level. He is not so in matters of health. Here it is a matter of mystery, perhaps magic, and he is uncritical. The negative response to suggestion therefore may be intellectual appraisal of the idea suggested or the idea may encounter an unconscious defense against acceptance of the suggestion, the defense being motivated by a threat of loss of ego control.

Aside from those ideas accepted on a logical basis at an intellectual level, suggestions are in fact accepted or rejected according to unconscious psychological mechanisms. If the suggestion from a certain person is interpreted as a threat, then unconscious mechanisms come into play to prevent the acceptance of such a suggestion. The patient doesn't want to lose control of his ego. With the "wrong suggestor" the patient feels the need to defend himself. If the method of suggestion be changed then the same defenses may not be applicable and the suggestions are accepted, especially if the patient has developed a transference identification with the doctor and a real rapport.

In everyday life suggestions are easily accepted in psychologically unimportant areas, where no need for defenses arise, as for example in pleasantries of normal conversation and in areas in which the patient has no emotional investment. However, most normal people are ready to accept appropriate suggestions within the mildly paranoid areas in which emotionally colored matters such as religion and at times politics are involved. In general then suggestions are easily accepted by two different groups of people. Those well-adjusted emotionally who have no need to defend themselves, and those who do have need to defend themselves but because of poor personality integration or in mildly paranoid areas in which they are searching for support to their bias, are unable thus to defend themselves. These two groups should be recognized by the physician if he would understand why his suggestions to a given patient have succeeded or failed.

Among those who are ordinarily not suggestible are the insecure who defend themselves with openly alert and suspicious attitudes. There are also those who cover up their emotional inadequacies with defense by intellectualization. But in all of us there is a trigger mechanism which at a moment's notice can touch off the critical faculties of the intellect and terminate whatever suggestions have been built up.

We have seen that many factors influence the intervention of the intellect including drugs, fatigue, the nature of suggestions, the state of rapport between the subject and the physician offering the suggestion. We have seen that simple suggestions when accepted can be followed by relatively more difficult ones. All these factors as well as the degree of equilibrium of the relevant dynamic forces within the psyche have a bearing on the point at which the intellect intervenes to call a halt to the suggestive process.

The important lesson to us physicians is this: If suggestibility is a dynamic function of the psyche, then the point at which the intellect intervenes both in the waking state and in hypnosis should and in fact is capable of some modification by an appropriate psychodynamic approach. In short a better understanding of human psychodynamics is becoming increasingly necessary for the physician who wishes to treat the whole person "body and soul."

In answer to the question in the title, Who Is Suggestible?, we must say almost everyone, in certain areas, by the right person with an appropriate technique.

L.H.N.

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Venous Cutdowns

Intravenous cutdown in the treatment of seriously ill patients is utilized primarily in emergencies. But they are also used at operation to establish a dependable intravenous route of large caliber especially when intact superficial veins are not available for needle puncture. This procedure, however, has its hazards. In a study at the Tufts surgical service describing systemic infections with organisms of genus herellea, septicemia in nine out of eighteen patients appeared to originate in cutdown sites.[1]

Of course this is not really surprising because the catheter is a foreign body which lies in contiguity with the contaminated skin surface, the surgically traumatized subcutaneous tissue and the vein lumen and most often remain in place for periods up to several days. As long ago as 1953 Irwin, et al.[2] studied various local treatments to prevent infection which followed the use of polyethylene tubing in intravenous therapy, but found no apparent effect from collodion, bacitracin ointment, or flamed tape. Does this mean that we have to expect the frequent local suppuration, phlebitis and at times systemic infection that accompany venous cutdown?

Druskin and Siegel[3] found a large percentage of positive cultures from the tip of the indwelling polyethylene catheter after 48 hours. There seemed to be no correlation between the development of clinical phlebitis and local infection. The administration of systemic antibiotics did not prevent local infection. They also found a high incidence of staphylococcus albus in their cultures.

Many questions have been left open by Irwin's studies. What are the organisms found in the wound around a polythylene catheter? Does correct antisepsis employed at the time of insertion of the catheter reduce local infection? What is the incidence of irritative or chemical phlebitis which develops in any cutdown and what part of these become infected or in fact develop because of primary local infection? Is there a topical application which can greatly reduce the incidence of local infection thereby preventing systemic as well as local inflammation?

Moran, Atwood and Rowe[4] have just published a report on a controlled double blind study of 89 cutdowns to determine the effectiveness of a locally applied antibiotic ointment containing three antibiotics, bacitracin, neomycin, and polymyxin in controlling cutdown complications. The study was thorough, using clinical and bacteriologic data collected on each cutdown, the results of dry dressings were compared with those of a placebo and those in whom the antibiotics noted above were applied, in an attempt at preventing cutdown complications. The authors studied the relation of clinically apparent cutdown suppuration and phlebitis to bacterial invasion, the sources and types of invading bacteria, the time course of cutdown complications and several other clinical and bacteriologic aspects of cutdown complications.

The first finding of importance was the wide spectrum of bacteria found in the local wound, the commonest being staphylococcus albus and aureas, enterococcus and diptheroids together with herellea klebsiella and even clostridium welchei. It is not surprising that Irwin found bacitracin alone insufficient and why Moran undertook to study an ointment containing several antibiotics.

The gratifying result of the use of the multiple antibiotic ointment was that of those in whom it was used locally and daily it inhibited infection in 82 per cent while 78 per cent of those in whom it was not used develop local infection. Not only did it prevent local infection, but five patients on anti-

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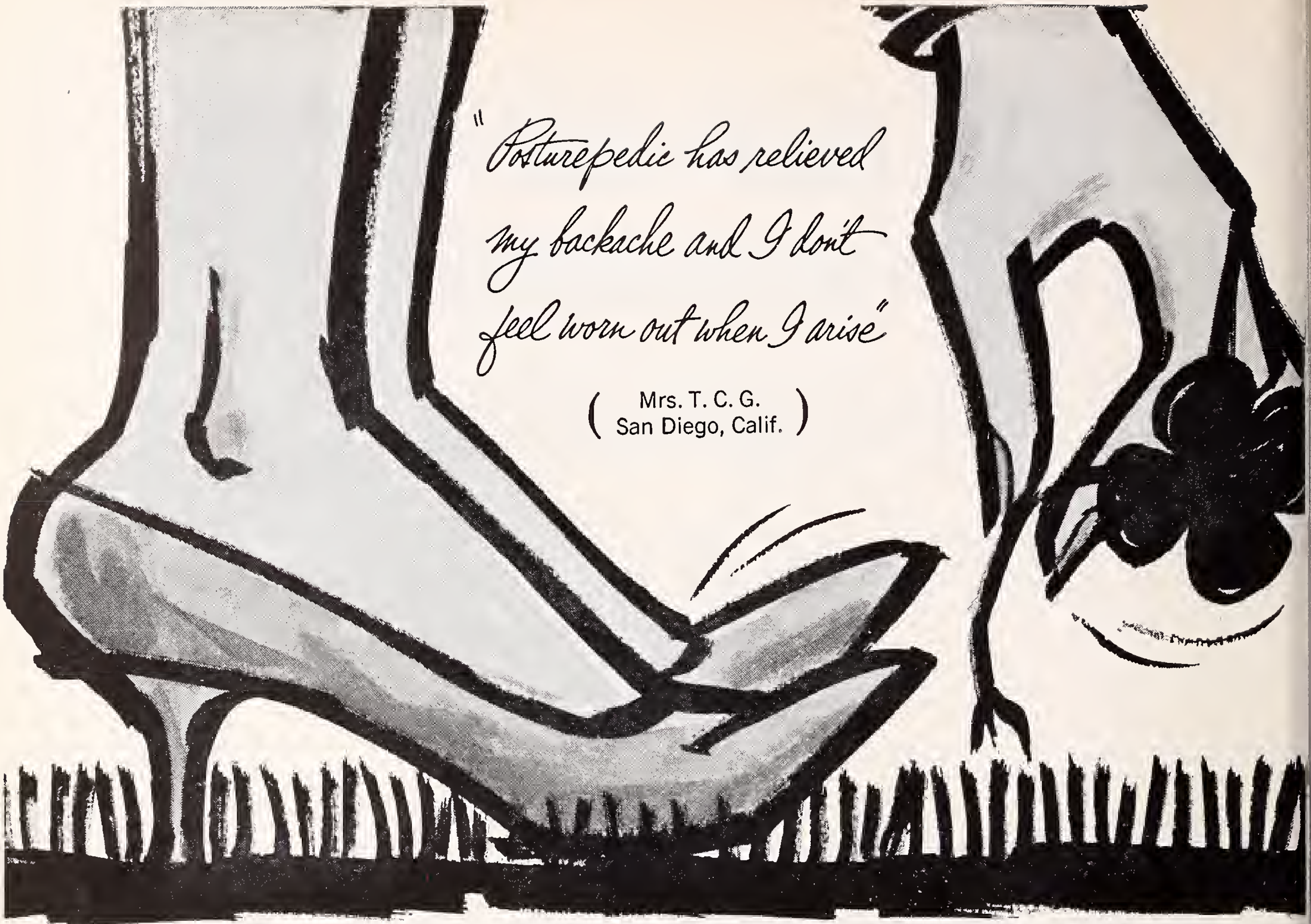
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biotic ointment who developed severe phlebitis remained sterile.

Moran mentions some factors which were not related to the local antibiotic or infection. There was found no relation between the ease or difficulty of the surgeon to introduce the catheter and infection, if the antibiotic ointment was used. There was no bearing of systemic antibiotics employed for prophylaxis or infection elsewhere on the culture results. Medications like potassium chloride formerly implicated in promoting local infection was not related to it. Furthermore, there was no recognizable effect upon the local cultures if an antibiotic was administered through the catheter.

Sometimes we can learn from failures as well as successes. In Moran's series there were seven failures of the antibiotic ointment to prevent infection. What could have been the reason? Could it be due to mechanical factors that prevented the entrance of the ointment into the wound along the catheter? Could it be due to insufficient concentration of the antibiotics in the ointment in relation to the numbers of organisms present? Could they have been due to organisms not responsive to the antibiotics in the ointment? Further studies along these lines are needed.

Another problem is to determine the origin of the 12 of the non-bacterial phlebitis. Is it mechanical or chemical irritation due to the plastic catheter itself? It was not due to intravenous medications and probably not the ointment itself.

Then are the questions of the percutaneous insertion of plastic catheters. Are these accompanied by as many septic complications as cutdowns? Here the skin is not shaved, dressings are more occlusive and there is a tendency for such catheters to leak, factors that would favor more rapid overgrowth of normal and transient skin flora. It would thus appear that patients with percutaneous catheters could also benefit from daily topical applications of antibiotic ointment. These would include those used in regional perfusion chemotherapy for cancer, paracentesis for pertoneal dialysis and ascites, drainage ventricutostomy, indwelling spinal catheters and others.

The recommendation by Moran that combined antibiotic ointment, such as was used in his study, be applied daily to cutdowns as well as percutaneous catheters as a means of lowering the rate of infectious complications warrants clinical trial.

L.H.N.

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Medullin: An Exercise In The Scientific Method

Since Goldblatt's classical studies on renoprival hypertension several forms of experimental renal hypertension have been developed for study. One is partial renal artery occlusion. Another is chronic compression of renal parenchyma. Each of these, have in common a reduction in renal blood flow. However, partial renal artery occlusion must be bilateral to be certain of producing hypertension. In unilateral renal artery stenosis, removal of the normal kidney is generally required to produce hypertension. In these experiments on the kidney, the question immediately comes to mind why is it necessary to extirpate the normal kidney before hypertension can be produced. Can it be that the normal kidney in some way antagonizes the pressor effects from the renoprival kidney?

Some experimental observations support this supposition. Removal of both kidneys produces renoprival hypertension. This obviously cannot be ascribed to a renal renin-angiotensin mechanism in the absence of both kidneys. If a normally perfused kidney is introduced[1] the hypertension subsides. If renomedullary tissue is explanted[2] the hypertension also subsides thereby proving that the hypertension is not the result of an excretory loss. But the final proof that the hypertension of bilateral nephrectomy is not due to excretory loss comes from experiments in which oral administration of renomedullary extracts to bilaterally nephrectomized[3] animals prevents the development of such renoprival hypertension. Evidently the renal medulla contains some substance that prevents hypertension of renal origin.

This hypothesis helps us to understand some forms of clinical and experimental hypertension. First are the observations in human hypertension and in chronically established experimental hypertension produced by renal compression or renal artery ligation[4] that one cannot consistently detect pressor agents in amounts sufficient to account for the degree of blood pressure elevation. Then there are the documented cases of human renal artery stenosis without blood pressure elevation.[5] We are thus led to the belief that certain states of hypertension may result from a deficiency of a renal

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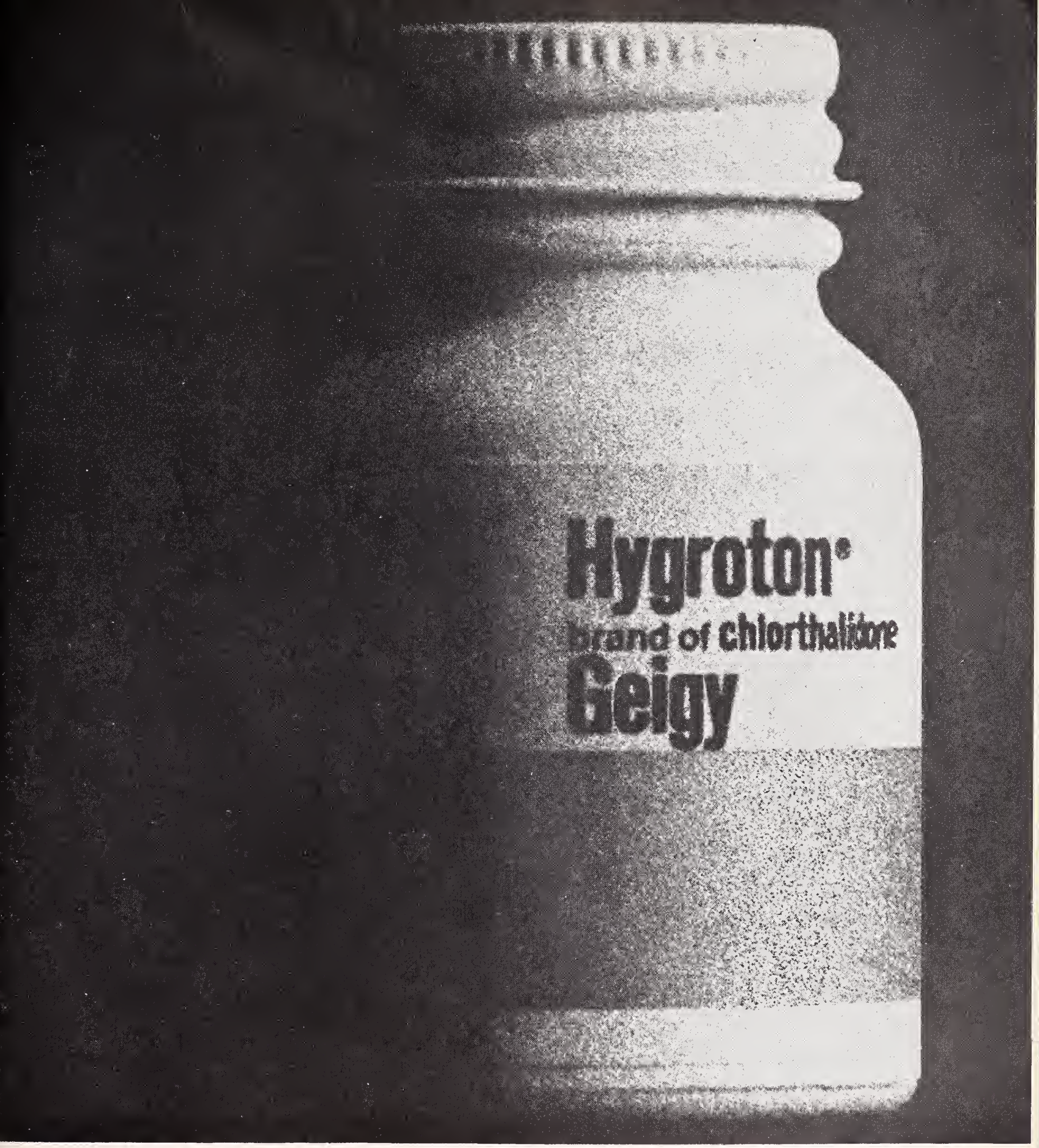

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vasodepressor substance rather than solely from an increase in the renal pressor mechanism.

It is this kind of observation and this kind of reasoning that led Lee et al.[6] to search for a specific vasodepressor substance in the renal medulla. The isolation finally came after much beautiful biochemical techniques. They used frozen rabbit kidney medulla. By column and thin-layer chromatography, they finally isolated in almost pure form two lipid soluble acids, one medullin with a molecular weight 4500, and another prostaglandin E-1.

The next step was to develop a model system in which medullin could be tested for its cardiovascular effects. The peripheral effects were studied in normotensive vagotomized rats with sympathetic blockade. It soon became clear that medullin produced arteriolar dilatation, increased venous return and cardiac output together with an increase in heart rate. In dogs, peripheral blood flow studies also showed peripheral vasodilatation with increased venous return and a 30 per cent increase in cardiac output. To determine whether any of these effects were the result of direct action on the heart, medullin was tested in isolated rabbit hearts and no increase in rate or cardiotonic effects were found. Clearly the whole effect of medullin is on the peripheral circulation. No observations were made on veins. Obviously if venous dilatation also occurred, the blood would pool in the veins and venous return would fall. It must be assumed that venous tone remains, to force the blood back to the heart, thereby increasing cardiac output.

There emerges from these beautifully conceived and executed studies a new principle. The kidney functioning renal mass exercises a protective role in the prevention of some forms of experimental hypertension by the medulla producing a potent naturally occurring vasodepressor substance which lowers blood pressure by direct arteriolar dilatation.[7] Since the active substance, medullin, is localized primarily in renal medulla we must postulate that there may be an intrarenal control of medullary as well as cortical blood flow. Whether medullin is active in intrarenal regulation of medullary blood flow will have to await further investigation. Additional studies will be required to establish whether medullin is in fact liberated and possesses a physiological role in systemic blood pressure regulation. If this new hormone is liberated, the factors which cause its release must finally be uncovered.

L.H.N.

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Lincoln Autopsy Report Reviewed

Controversy continues about the details of the autopsy on Abraham Lincoln.

In the curent Journal of the American Medical Association, a recently discovered autopsy report by Lincoln's personal physician is reviewed by John W. Lattimer, M.D., of Columbia University, New York.

It had been hoped that the report by Dr. Robert King Stone would resolve the question of Lincoln's fatal wound. Some observers at the time swore the bullet fired by John Wilkes Booth entered on the left side of the head; others said it was on the right side.

Dr. Lattimer's conclusion, after reviewing Dr. Stone's hand-written report and a diagram: the details of the wound still aren't clear.

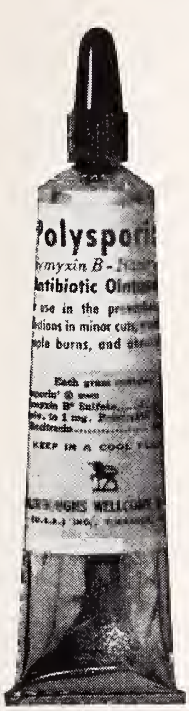
Dr. Stone's notes clearly state that the bullet "lodged in cerebral matter . . . on the left side." His diagram, however, doesn't make this clear.

Other doctors at the time just as emphatically stated that the President's wound was on the right side of his head.

How could medical authorities disagree on such a fundamental point? Dr. Lattimer supplies an answer:

"It must be remembered that all of the doctors who made these statements had been awake continuously for at least 30 hours, under the most severe emotional stress, by the time they attended the autopsy. There was great confusion as to how the bullet hole came to be in the left side of Mr. Lincoln's head, since Booth had approached him from his (Lincoln's) right side. Against this background there is litle wonder that conflicting testimony appeared."

Dr. Stone's handwritten autopsy report is in the custody of the New York State Historical Association, Cooperstown, N. Y.



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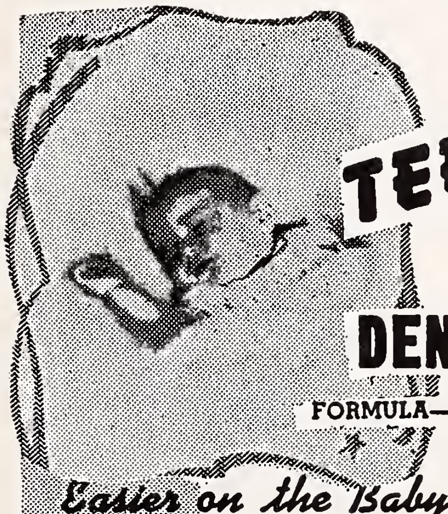

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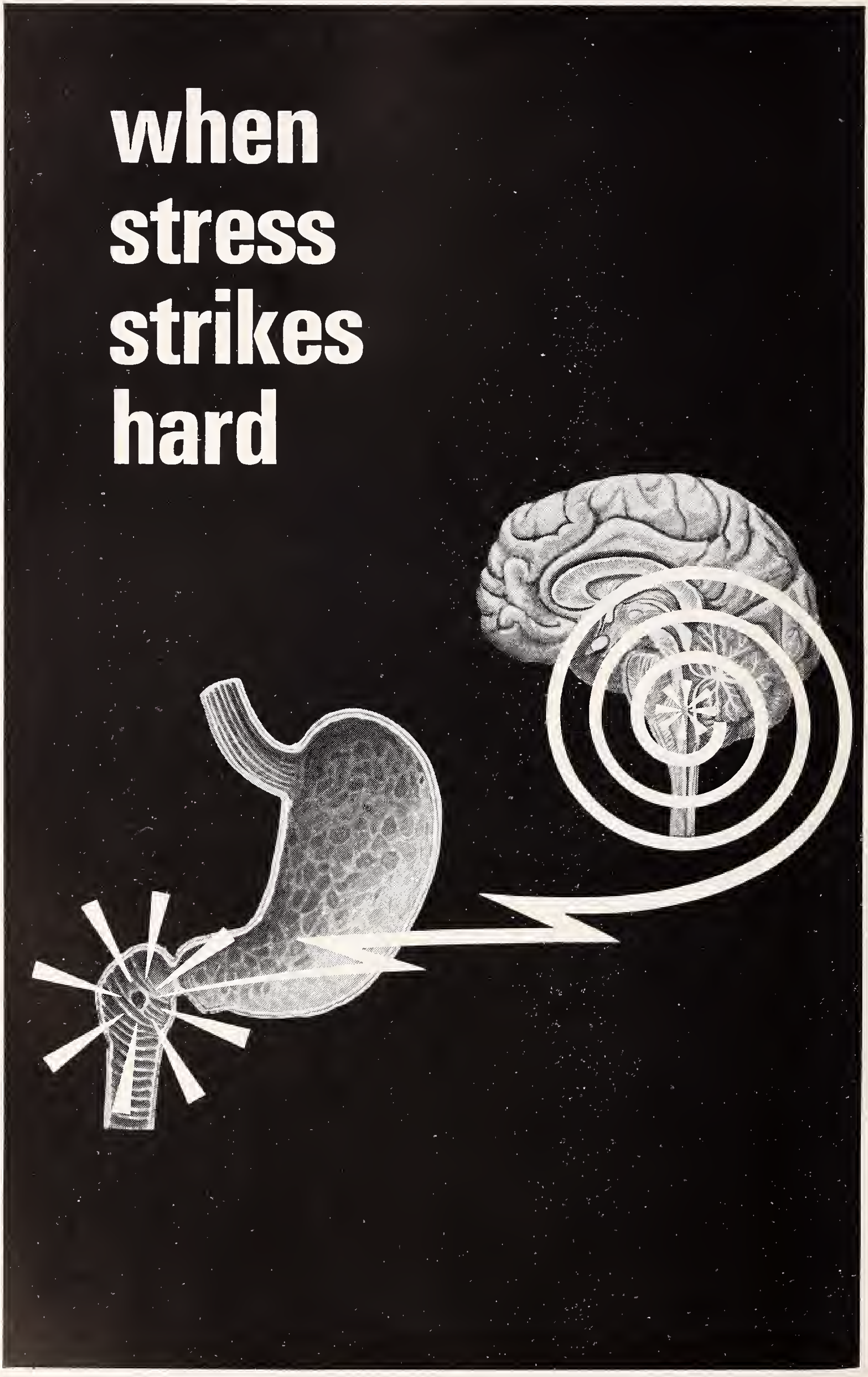
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Research in the Service of Medicine

Annular Pancreas

David T. Monahan, M.D., F.A.C.S. and Isidore Yasser, M.D.

Annular pancreas is an extremely rare lesion. Ten years ago Cattell and Adams found approximately 50 cases reported in the literature and 39 of these were first found at autopsy. About one third of the total occurred in children. Of the 11 cases operated upon up to that time, in only three had a pre-operative diagnosis been made. Since 1954 sporadic reports have called attention to this interesting anomaly.

The case which prompted this report was encountered in 1962. Records of the Bridgeport Hospital reveal only one other case of annular pancreas; this patient was first operated upon in 1948, with subsequent admissions in 1953 and 1963.

Anatomy

The annular portion of the pancreas, in this malformation, derives from two limbs of pancreatic tissue which extend around the second portion of the duodenum—one limb in front and the other behind. The limbs usually fuse completely, obstructing the duodenum in varying degrees. If fusion is incomplete, the defect is on the anterior surface of the duodenum. The annular pancreas is usually traversed by a major duct which runs to the right and empties into the main pancreatic or common bile duct. Chronic pancreatitis and duodenal or gastric ulcer are frequently associated with annular pancreas.

Symptoms And Findings

If the lesion does not constrict the duodenum, there may be no symptoms from this anomaly. With partial obstruction epigastric fullness, nausea and vomiting occur. An interesting observation, in some adults with this condition, has been the good nutritional state of the patient, in spite of prolonged symptoms. X-rays will show dilatation of the first portion, with partial block of the second portion of the duodenum. In the presence of a concomitant scarred and contracted duodenal ulcer, the first portion of the duodenum may not be dilated.

Case No. 1

A 50-year-old man was first seen in July 1962 complaining of poor appetite and bloating after meals. He had become adjusted through the years to a diet of liquids and soft foods, finding them more easily digested than meats. His weight during adult life had remained at 155 lbs. without much variation.

A summary of the X-ray report is as follows: "The stomach shows coarsening of the mucosal folds. The first portion of the duodenum is markedly enlarged and measures about eight cm. in widest diameter. Some of the barium passes promptly into the lower duodenum and jejunum. The descending limb of duodenum is not distended. The four-hour film reveals a large amount of barium retained within the cap and stomach.

"Impression: Large duodenal bulb with evidence of delayed passage of barium through the post-bulbar segment. The finding of obstruction in the second portion of the duodenum suggests a post-bulbar ulcer. A neoplastic lesion primary in the duodenum or arising in the common duct or pancreas must be considered."

Because of the absence of pain or jaundice, the good nutrition of the patient, and the location of the obstruction, a diagnosis of annular pancreas with partial obstruction was made, and exploration recommended.

At operation, (D.M.), the duodenum beyond the pylorus was markedly dilated and the wall of the gut hypertrophied. Reflecting the colon downward for some distance, an annular pancreas was found encircling the second portion of the duodeum (Fig. 1). Below the obstructing lesion distal duodenum was uncovered and it was noted to be thin-walled and much smaller in diameter. The markedly dilated portion of the proximal duodenum could be approximated to

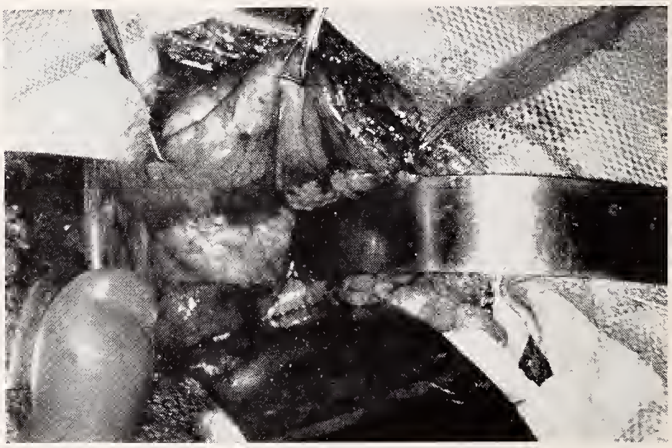

Figure I

Annular pancreas revealed after reflecting colon downward. Note the duodenum dilated and thickened proximally, and narrowed below the obstruction.

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the duodenum of smaller calibre, beyond the obstruction, without tension. A two-layer anastomosis, with a lumen of about three quarters of an inch, was performed. When the upper limb was opened, it was found that the area of partial obstruction would admit only the tip of the index finger.

The patient's post-operative course was complicated by focal atelectasis but was otherwise benign. He has since been eating a varied diet without distress and is fully rehabilitated.

Post-operative X-rays showed prompt progress of the barium through the duodenum and almost complete return to normal size of the previously distended proximal duodenum. After five hours the barium was scattered throughout the small intestine and colon.

Case No. 2

A two and one half-year-old boy was first admitted in March 1948 with a history of vomiting since birth. The vomitus contained foods given 12 hours previously. Nutrition and development were poor. At one and one half years of age X-rays had shown a "large stomach and pylorospasm." X-rays in 1948 revealed "huge enlargement of the duodenal cap with obstruction between the first and second portions of the duodenum. Retention of barium was noted after 24 hours."

The patient was operated upon with a diagnosis of obstruction from "hepato-colic bands." The hepatic flexure of the colon was reflected downward and a "ring of pancreatic tissue was found encircling the second portion of the duodenum. This was divided on the lateral aspect, that is, at the right side of the duodenum, away from the main pancreatic ducts. Once the duodenal wall was exposed beneath this ring of pancreatic tissue it bulged out and seemed to completely relieve the obstruction." The patient was discharged improved.

Second admission: In July 1953 he was readmitted with complaints that he had continued to vomit, ate only strained vegetables and stewed fruits, and had failed to gain weight. X-rays showed a "very large" duodenum with obstruction at the junction of the first and second portions of the duodenum.

At operation an enormously dilated stomach and first portion of the duodenum were found. An attempt was made to perform a duodeno-jejunostomy but "due to adhesions this was found to be inadvisable. A posterior gastro-enterostomy was done."

Thrid admission: In April 1963 he was admitted complaining of weakness and tarry stools. Hgb. was found to be 4.7 gms. He was given six units of blood (3000 cc.). X-rays did not reveal an ulcer and the patient was discharged.

Fourth admission: In the interval he had passed a large tarry stool but there was no significant anemia. In December 1963, however, he again had a massive hemorrhage which required six units of blood (3000 cc.) for correction. Gastroscopy did not reveal any ulceration but the scope could not be passed into the dilated duodenum.

*Operation** was decided upon. The dilated duodenum was divided beyond the pylorus. No ulceration was found. Unsuccessful attempts were made to pass a fine catheter through the area of obstruction. A "varix" was noted at the site of the gastro-enterostomy which bled actively when traumatized. This area was locally excised. The segment of stomach distal to the gastro-enterostomy was resected and the gastric stump closed in layers. Jejunum distal to the gastro-enterostomy was then anastomosed to the duodenal stump. The vagus nerves were divided. Gastritis was found in sections of tissue removed. The patient had an uncomplicated recovery and is reported to be doing well.

Discussion

It has been pointed out[1] that direct attack on the obstructing tissue in annular pancreas is hazardous for two reasons: first, a major pancreatic duct may be divided and a potentially fatal pancreatitis or pancreatic fistula result, and, second, the obstruction may not be relieved because of congenital narrowing of the duodenum in the area of encirclement. Anastomosis around the obstruction, a duodeno-jejunostomy has been employed successfully by Gross.[2] That gastro-jejunostomy alone is an unsatisfactory alternative is suggested in Case No. 2.

In a high percentage of reported cases the annular pancreas has been overlooked at the operating table.[1] This should not be the case if surgeons keep this entity in mind and check to note its presence or absence. Of significance is the frequent association of gastric or duodenal ulcer with this anomaly. If gastric resection is elected for ulcer in the presence of annular pancreas, it would seem wise to make special efforts to produce achlorhydria by use of a 70 per cent gastrectomy plus definitive vagotomy.

Summary

Two cases of annular pancreas have been presented. It is suggested that duodeno-duodenostomy is a satisfactory procedure in the surgical treatment of this anomaly. If this is not feasible, duodeno-jejunostomy should be done. Division of the obstructing pancreatic tissue should be avoided. Gastro-jejunostomy alone is also an unsatisfactory method of treatment.

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* Performed by Dr. Edward Kamens.

Internal Jugular Phlebectasia

Report Of A Case

James R. Cullen, M.D. and John A. D'Alotto, M.D.

In the September 1964 issue of the *American Journal of Surgery*,[1] Doctors Garrow, Kirschtein, and Som reported a case of Internal Jugular Phlebectasia, thus bringing the total number of reported cases to six.

This interesting vascular anomaly presents itself as a completely asymptomatic neck swelling, which appears on Valsalva maneuver. Differential diagnosis of such a mass would be: (1) tumors or cysts of the superior mediastinum, (2) laryngoceles, (3) cystic hygroma, (4) lung herniation and (5) venous enlargement.

Due to the apparent rarity of this anomaly, we felt that the report of this additional case was warranted.

The patient, R.M. ♯K24151, an eight year old boy, was admitted to this hospital with the chief complaint of a right-sided neck swelling. This swelling was present on coughing, sneezing, blowing up a balloon, or straining but would then go down immediately. There was no history of associated infection. The mass was first noted one year prior to this admission and, at that time, he was admitted for diagnostic studies. At that time, barium swallow and roentgenograms of the neck and chest were taken. The interpretation of these studies was that on oblique view there was evidence of air being higher in the right neck than in the left. The patient was discharged with the diagnosis of probable cystic hygroma or possible lung hernia.

Past history revealed that the boy had been one month premature and had neonatal atelectasis.

Physical examination was within normal limits except for the neck findings. The mass would appear on Valsalva maneuver and presented as a two centimeter, diffuse, soft, fluctuant mass. It presented on the anterior border of the sternocleidomastoid muscle at the junction of its middle and lower one-third. The trachea was in mid-line and there were no other masses present in the neck. Repeat neck roentgenograms were of no diagnostic assistance.

On August 31, 1964, the patient was taken to surgery where the neck was explored through a right transverse incision. The sternocleidomastoid muscle was incised and retracted. At this time, it was noted that the internal jugular vein was covered by only a thin fascial layer. There were three areas of the vein wall which were extremely thin and through which swirling of the blood was visible. With the anesthesiologist's cooperation, the patient was made to gag, at which time marked ballooning of the vessel was noted over a 2.5 cm. area (See Figure).

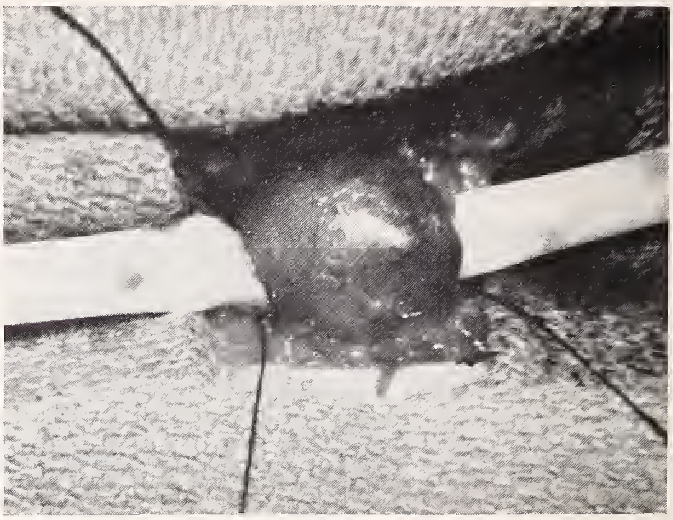

Figure I

The vein was then dissected free from surrounding structures and doubly ligated above and below the areas of dilatation with ♯00 silk. The vessel was not removed.

The postoperative course was entirely uneventful and no congestion of the head was experienced.

Summary

The seventh proved case of Internal Jugular Phlebectasia is presented.

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Glomectomy In The Treatment Of Asthma

Richard H. Overholt, M.D.

Asthma remains as one of the great enigmas. It is a multifaceted syndrome that is unpredictable in behavior and in response to remedy. A common etiologic denominator is woefully lacking. We are puzzled by its selection of the victim, by the frequency, intensity and duration of attacks, and even by a spontaneous remission if it occurs. We are mystified by its curious relationship to allergies, infection and emotional disturbances. These factors are not by any means specific because many more non-asthmatics are involved with these burdens, singly or in combination, than are asthmatics.

In treatment desensitization may be specific, but empiricism prevails in drug programs. The nature of the biochemical changes produced by bronchodilators, expectorants, sedatives and steroids within the organ systems is not known. Most so-called antispasmodic drugs are combinations of chemicals and often two or more brands are prescribed simultaneously.

Although Nakayama[1] reported in 1948 on a favorable influence of carotid body removal in the behavior of some asthmatics, his work remained unknown to me until nine years later when, in 1957, Dr. Yaeman Shiraha of Osaka came to our Clinic for postgraduate study. With his help Japanese literature was reviewed. Current results from Professor Nakayama's Clinic were determined by correspondence. In close to 4,000 cases treated, the majority were benefited with 72 per cent improved after two years and 58 per cent after five years. Immediate risk or late undesirable sequelae were practically non-existent.

Anatomy

The carotid bodies are bilateral paired organs, the size of a grain of rice, situated at the carotid bifurcation. They are embedded in a plexus of nerves and in the adventitia of the vessel walls. They are grayish-pink in color and distinguishable from the slightly yellowish tinge of the nerve structures. The body consists of masses of chromaphil tissue supported by connective tissue. They encompass sinus-like capillaries and lymph channels. Scattered nerve cells are present and the whole organ is permeated by non-medullary nerve fibers which establish intimate connection with the chromaphil or "chief" cells. The carotid plexus is made up of fibers from the glossopharyngeal nerve, the pharyngeal branch of the vagus and the upper sympathetic chain.

Other non-chromaffin bodies associated with great vessels are to be found. The aortic bodies lie anteriorly on the arch on the left and upon the innominate artery on the right. Other similar structures are found high in the neck by the jugular veins and others on the dorsal aspect of the bifurcation of the pulmonary artery.

Physiology

The carotid and aortic bodies are termed "chemoreceptors" whose activity is concerned in control of respiration and circulation. These structures have been extensively studied by Heymans,[2] Schmidt,[3] Nakayama,[4] and others. The preponderance of respiratory influence is in the carotid bodies; whereas, any blood pressure effect is more dominant in the aortic bodies. Since these structures are coupled by extensive connections between the parasympathetic and sympathetic systems, the tone of bronchial musculature may also be influenced. Investigators have concluded, however, that the carotid and aortic bodies are intermediary organs in the autonomic nervous system and that they are triggered only by significant alteration in CO_2, O_2, and pH of the circulating blood. Decreases or increases in these values could then affect respiratory rate, blood pressure, and red cell mass through signals from these bodies.

Nakayama has carried out exhaustive studies in both animals and humans before and after blocking or obliterating one or both carotid bodies. A loading test of 5 per cent CO_2 caused an increase in respiratory rate and red cell mass before or after removal of one carotid body. These reflexes were abolished by bilateral removal. Injections of sodium cyanide before or after one carotid body removal caused an elevated blood pressure. After bilateral removal, this reflex was abolished. After bilateral glomectomy, experiments to lower the blood pressure using Lobeline failed.

A recent report by Dulfano, Schlesinger, Marvit, Segal and Soroff[5] reveals that following a challenge with Mecholyl, in the dog, the difference between pre and post glomectomy was striking. There was a

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significantly greater tidal volume, with an accompanying decrease in airway resistance and pressure in the animals following glomectomy. Prior to glomectomy, the reverse was true when these animals were challenged with Mecholyl. The authors state that these observations were made immediately following glomectomy and should not be translated to acute or long term effects in the clinical setting of asthma.

Technique

Local anesthesia is used for the great majority. Children under six years have been given a general anesthetic. The incision, 3 to 4 cm below the angle of the mandible and parallel to it, is placed in a crease line of the neck. Skin flaps are raised; the platysma fibers are exposed and separated; the medial border of the sternomastoid muscle is retracted laterally; and the carotid sheath comes in view and is opened. The adventitia of the upper 1 cm of the common and the lower 1 cm of the internal and external vessels is removed. The superior thyroid artery is doubly ligated and divided at its origin from the external carotid artery in order to facilitate exposure of the carotid body and sinus nerve. These structures are usually found in the medial aspect of the bulb and intimately bound to the vessel walls by adventitia and a matrix of nerve fibers which make up the carotid plexus. Other structures in this area are visualized. A small nerve filament swings around the superior thyroid artery only 2 to 3 mm, above its take-off. The hypoglossal nerve crosses the field above and may require upward dislocation. The posterior belly of the digastric muscle, lower pole of the submaxillary gland, and the thyrohyoid muscle and hyoid bone may come into view. The vagus nerve lies posterior to the internal carotid. The carotid body, the sinus nerve and plexus can be moved safely without division of any muscle or injury to any important structure. Meticulous wound closure usually results in an invisible scar.

Clinical Experience

In May 1958 our first case was done and the preliminary reports on results in 69 cases were given in December 1961.[6] The experience had grown to 160 cases reviewed in June 1962.[7] Gradually, the number of referrals has increased so that 577 treated cases have been followed for more than six months and 77 for more than three years.

Indications

Patients who have been accepted for glomectomy have possessed one of two basic siuations—(a) intractable asthma which has failed to respond to various medical regimes, requiring constant medical supervision, and often emergency treatment in the home or in the hospital, and (b) asthma under fair control but the cost of medication (steroids) has become burdensome or hazardous.

Three categories of patients as to physical findings have been accepted for treatment:

A. Uncomplicated asthmatics who, when not in an attack, are negative on general examination and by chest x-ray.

B. Patients with low pulmonary reserve (emphysema) and associated paroxysmal bronchospasm (asthma).

C. A miscellaneous group with other structural abnormalities, such as bronchiectasis, bronchostenosis, cysts, tuberculosis, or hiatal hernia with reflux which has or may require surgical intervention.

Results

Referring physicians and patients have reported on pre- and post-operative differences in the frequency and severity of attacks. Results have been graded as follows:

		FREQUENCY OF ATTACKS	DEPENDENCY ON DRUGS
0	No improvement	Unchanged	Unchanged
I	Slight improvement	Fewer	Some decrease
II	Moderate improvement	Occasional	Reduced by 50 per cent
III	Significant improvement	Rare	Occasionally used
IV	Marked improvement	None	None or rarely

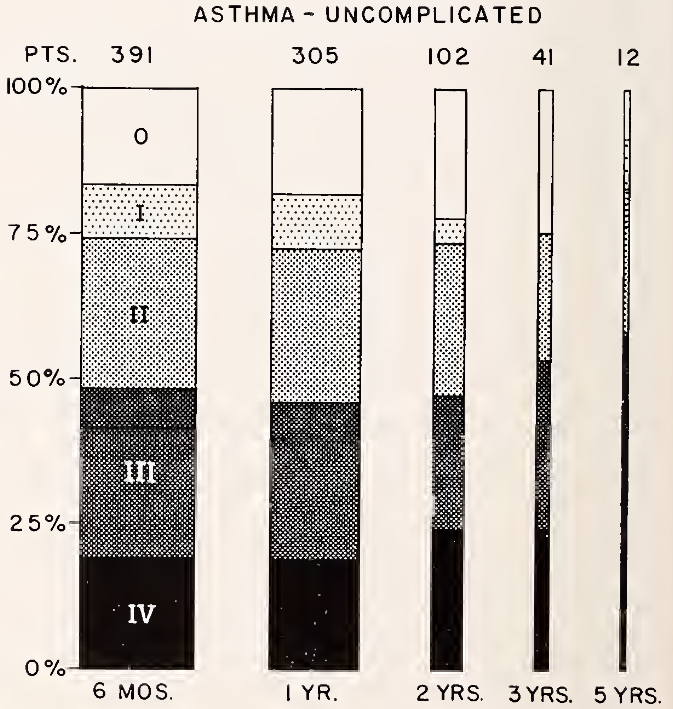

Figure I

Evaluation of change in condition of uncomplicated asthmatic patients followed at various intervals after glomectomy. (See text for grading.)

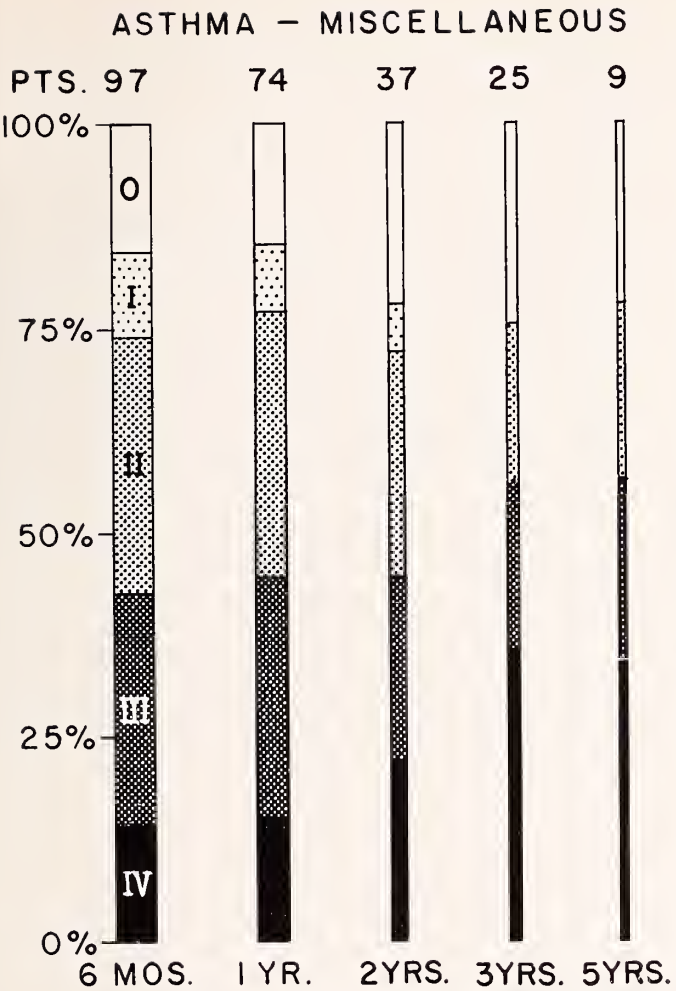

FIGURE II
Evaluation of change in condition of asthmatic patients with associated disease followed at various intervals after glomectomy. (See text for grading.)

In Figures 1, 2 and 3 are assembled the tabulations for the three categories. It will be noted that almost half were significantly benefited (Grades III and IV). It has been impossible to correlate results with all the various pre-operative drug programs. However, about half of the cases were on steroids prior to glomectomy, and these undoubtedly represented the graver types. A comparison of total failures (Grade 0) with those in Grade IV (cessation of attacks and no medicine required) as to pre-operative steroids was made. In the failure group 75 per cent had been on steroids whereas in Group IV only 40 per cent had been on such a program.

It is my impression that the hysterical type of patient is less likely to benefit from glomectomy. It is difficult to classify personality especially in those harrassed by asthma. Sedwitz[8] has also found that best results seemed to be obtained with patients of stable personality. There are enough exceptions to the rule, however, so that we do not feel justified in denying this therapy because of a suspected emotional overlay.

Discussion

Why a unilateral glomectomy seems to benefit some asthmatics is far from clear. More than one theory has been advanced:

1. Since bronchoconstriction and bronchodilatation are controlled by the vagus and sympathetic systems and since an intercommunication of these nerve trunks does exist at a level above the pulmonary plexus, it is possible to dampen a reflex disturbance which results in bronchospasm.

2. Rapid and shallow breathing is triggered by the carotid bodies in response to lowered O_2, elevated CO_2 and changes in the pH of the blood. This would be detrimental in an allergic individual with congested mucosa and narrowed bronchi. Faster but shorter breaths would not then improve pulmonary ventilation. On the contrary, it would create turbulence and interfere with efficient delivery of fresh air to the alveolar units.

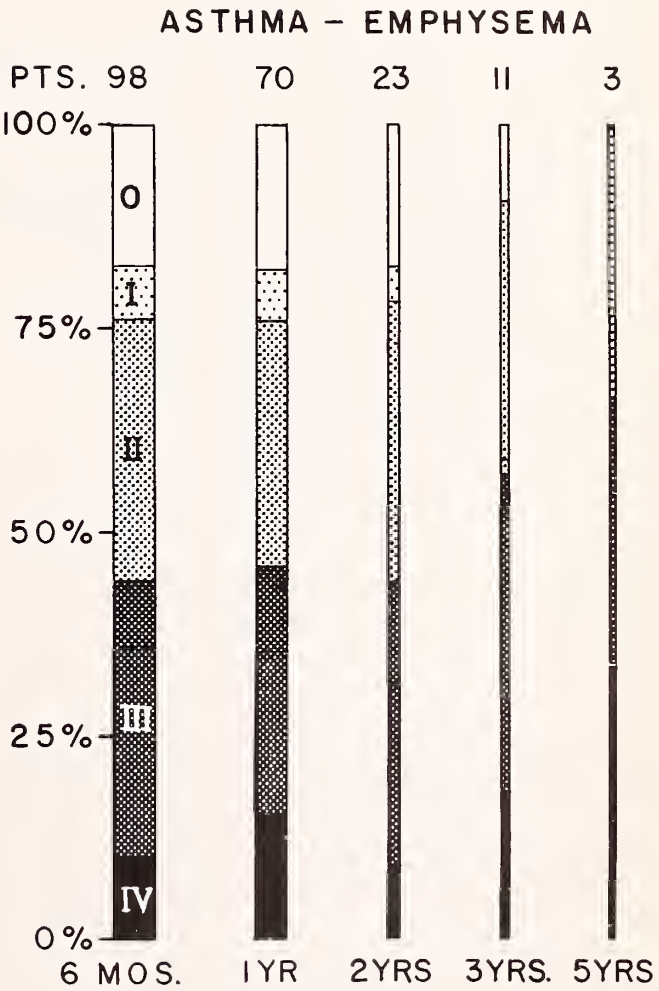

FIGURE III
Evaluation in condition of patients with asthma plus emphysema followed at various intervals after glomectomy. (See text for grading.)

3. That the mechanism of respiration is changed, possibly altering the synchronization of costal cage, diaphragmatic movement and larynx in such a way that air trapping is less apt to collapse major bronchi during the expiratory phase.

4. Asthmatics differ from non-asthmatics in regard to the threshold of carotid body (chemoreceptor) and carotid sinus (baroreceptor). Takino[9] suggests that hyperactivity of both reflexes during the attack period enhances pulmonary vagotonia. Partial abolition of this trigger mechanism, therefore, would diminish bronchospasm.

Reports and correspondence indicate that over forty surgeons in the Unted States and sixteen in other countries have used this procedure in the treatment of asthma. Professor Nakayama continues to recommend it when indicated. In all of the larger series, results parallel closely our experience. Unilateral glomectomy can be considered as a useful adjunct in the management of intractable asthma or when control depends upon burdensome or hazardous medical programs.

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Philosophy And Intellect

For a good deal longer than 2,000 years the ablest men of every age have been fidgeting with the mechanism of the intellect in the hope of helping mankind to think and therefore behave reasonably. The state of the world today cannot but suggest that if practical thought is to become strong enough to help in saving our social systems from their increasing confusions, some more radical corrective is necessary.

The correction of instrumental errors is a familiar idea in practical science. The maker, having turned out as perfect an instrument as he knows how, studies the quality of its performance. Any error now found is to be dealt with not by tinkering with the machine but by having the constancy and amount of it carefully estimated and stated in a form that can be applied to the results. It is this method that forces itself upon us in determining the function of the intellect and rendering it fully available. Psychology has told us a great deal about the working of the mind and in an incidental way about its liabilities to error; but it has not systematically undertaken just this special practical task of, as it were, calibrating the intellect for the contemplation of ordinary experience. Unless such a work can be done it seems probable that the ominous fatuity and confusion that mark our social and political affairs must continue to increase.—Trotter, W.: Has the Intellect a Function? *Lancet*, 1: 1423 (June 24) 1939.

Baby Raising Simplified

Walter W. Sackett, Jr., M.D.

■ My first venture into Hartford signalled one of my earlier experiences into the realm of medicine—and one that probably played a major role in my seeking a medical career, but only after considering the law as a profession. Afflicted in my fifth year of life with osteomyelitis, and already the object of three surgical treatments of the kitchen table-chloroform routine, I can well remember my mother and I taking that 'long' train trip from Bridgeport to Hartford in 1910, for a consultation with a physician whose name long since has escaped my memory. While osteomyelitis was hardly a rarity in those days, the developed X-ray picture we carried with us certainly was, and apparently was to the consultant, for I can recall that the X-ray was of far greater interest to him than was I, the patient. Fifty-four years have elapsed since that fateful time in my life, and it seems reason for much wonderment and humble pride on my part that I should be invited back to impart a bit of knowledge to that same group of doctors, one of whom my parents sought out for help in the yester-year.

In the intervening years, 'improvements in care and in treatment have been voiced, many of them tremendous in their impact, and yet many more gone and forgotten in all fields of medicine, including the one in which I will speak to you today. Baby raising, like all the other various disciplines of medicines, has been subject to marked changes over the decades.

Through school with indoctrination in the more or less stereotyped '4-4' Grulee theory of baby feeding (4 hour schedule and addition of solids at 4 months), I soon came to know, but not to use, the Spock demand (and later permissiveness) theory. Neither must have impressed me too well, because I quickly found my mentor in the older mother with 4 to 12 children where, by necessity, the baby had to fit the family, rather than the family fitting the baby. In 1949, after a series of observations and deductions, I launched on a philosophy of baby raising which is summarized most advantageously by a series of tables. Table I explains the first few weeks of the schedule.

Table I

Six Hour Feeding Schedule

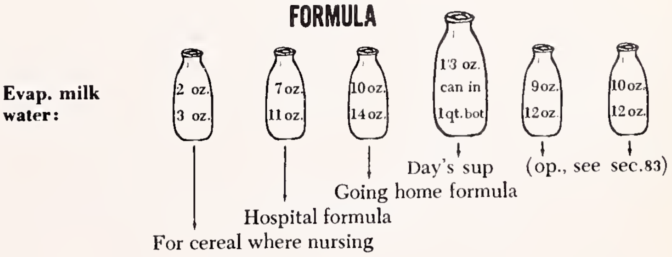
Feedings:	6 am, 12 noon, 6 pm, 12 midnight (or 7, 1, 7, 1 etc.) Offer water between feeding but nothing between midnight and 6 am.
At 2-3 days:	Cereal at 6 am and 6 pm. (12 noon, 12 midnight in hospital). Thick as putty. Oatmeal or barley suggested as starters.
At 10 days:	Strained vegetables at noon. (Peas, beans, carrots suggested as starters.)
At 14 days:	Strained meats (either at noon or 6 pm.)
At 17 days:	Soups, meat-vegetable combinations.
Midnight feeding:	May be dropped at any time. Then aim toward feeding: breakfast 7-9 lunch 12-2 dinner 5-7

Essentially the philosophy involves feeding a baby on a six hour schedule, with the addition of solid food in the form of cereal (as thick as putty) on the second day of life and converting to a three meal a day schedule, on the average, at three weeks—often earlier. Mothers are instructed to walk away from a crying baby, after a check for some imagined catastrophe, a practice I have labelled 'natural frustration.' Other foods are inaugurated in the schedule as indicated in Table II,

Table II

At Weekly Intervals Add:

3 weeks:	Orange juice and water, equal parts of each, at breakfast time, preceding cereal.
4 weeks:	Other juices; apple, tomato, pineapple, and prune. Only a teaspoonful at first!
5 weeks:	Egg (soft scrambled, coddled, or hard-boiled egg yolk).
6 weeks:	Strained fruits at 6 pm.
7 weeks:	Mashed banana—very ripe.
8 weeks:	Custard-puddings.
9 weeks:	Crisp bacon (well crumbled).



Presented on April 28, 1965 before the 173rd Annual Meeting of the Connecticut State Medical Society, Hartford, Connecticut.

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Table III

1) All new foods are started at one teaspoonful and subsequently increased rapidly.
2) Fill the baby at each feeding.
3) Do not make more than one change daily (i.e. new foods or change in formula).
4) Unless otherwise instructed, start meals with solid foods.
5) Additional useful suggestions re:
    a) Use of blended foods
    b) Sterilization
    c) Room temperature of foods
    d) No vitamins.

Table IV

1) Fewer eating and overweight problems.
2) Use of vitamins and supplements optional.
3) Happier and more contented babies.
4) Fewer dental problems.
5) Less atherosclerosis.
6) Better citizens and less delinquency.
7) Happier family adjustment in regard to other children.
8) Decrease in incidence of diarrhea.
9) Decrease in inspiratory infections in winter (Gough of Vancouver).

Additional advice to mothers on leaving the hospital include the points in Table III.

Certain advantages of this rather unusual philosophy listed in Table IV along with others, deserve discussion of a special nature.

Six Hour Schedule And Frustration

While at first I felt the mothers would be the great beneficiaries here, I soon found that the greatest benefits accrued from the fact that these babies are far better behaved babies—cry less when they know they are not to be picked up, and soon learn to fit into family life. An early and oft-directed impersonal question to the mother at the six week visit, "How are things going?", invariably elicits the response, "This is the best baby in the world." For a good while my answer, relegating that particular baby to the second-best spot is no longer applicable — our own two erstwhile first placers are now 12 and 14 years of age.

Second Day Feeding Of Solids

Contrary to current belief that babies cannot swallow cereal of a putty consistency, I found that they do it better than when I used to wait the full four months before starting solids. The solids aid the babies in going longer intervals between feedings—while the long interval increases the intake of food—one is the reciprocal of the other.

The Non-Use Of Vitamins

This seems to hold much more promise for future benefits than it did when I first started practicing it some ten years ago. The three vitamins A, D and K, implicated in disease when overdoses are given, will I am sure, be joined by others. In English medical literature, I recently read an article pleading for the English government to outlaw the practice of addition of vitamins to foods on this same basis. These 'six hour' babies get their vitamins from foods—and this fact is attested to by the admission of the experts that milk is deficient in certain vitamins and minerals, and hence the baby that gets no solids until four months of life must have certain supplements. My own question to them as to how ancient man survived then, if these supplements are only one generation old, has been answered—not by them, but by the observation that primitive man has been practicing a custom for ages known as 'mummins.' I have observed this custom in backwoods people of Alabama and Mississippi, wherein mother chews the food, stores it in the side of the mouth, and doles it out in little pinches to the baby. This is a form of solid food and ancient man's source of vitamins which most of our babies are being denied. Vitamins secured in the natural form, whether it be D from the sun or others from foods, can hardly be harmful to man.

No Sterilization

Where the water supply is adequate, I have been giving the admonition (of substituting cleanliness for sterilization) to mothers for ten years, without any regrets. Almost concurrently, bacteriological work done at Temple University substantiated this practice. It seems strange that, on one hand we should arrive at the decision to strive to create a sterile or semi-sterile existence for infants, and then on the other hand proceed to subject them to the various types of vaccine preparations which, after all are germs in some form, even if attenuated. How is one to get immunity to the germs of ordinary living if not exposed to them? I am quite sure in my own mind that thrush exists only in the presence of a perfect effort at sterilization — the absence of a normal mouth flora of germs invites the implantation and growth of the air-borne oidium albicans in the mouth of the crying infant.

The Omission Of Heating

While I have for some ten to fifteen years been advising the use of 'room-temperature' formula and foods, this practice more recently has been surpassed by the blessing of one authority for foods and formula fed directly from the ice box. If one could add to the 'wasted-time-category' all the time devoted by the mother, and yes, the nurse, to getting the food and bottles to the proper temperature (only to find the feeding to have reached room temperature toward the end), I am sure the amateur family efficiency expert would rub his hands in glee.

Banishment Of Milk At The Time Of Weaning

This needs, to my mind, little substantiation, in that I feel this is nature's intent. The occurrence of a 77 per cent rate of atherosclerosis in 300 twenty-one year old (average) American casualties in Korea, with its absence in Korean, Turkish and British casualties, should give us cause to think. The 40-50 per cent intake of fat calories, a large part of it milk or milk products, would seem to be a likely basis for early atherosclerosis, the first step in the future heart attack or stroke, especially when contrasted with the 10-20 per cent fat intake of the more primitive races. The introduction of coffee, preferably black, at five months of age, in sips, is not a gimmick, as some people would infer, but rather a form of insurance that this infant in later life would get to know and appreciate this drink—in view of its low calorie and absence of cholesterol content. I am sure man has been parching and making a drink out of some berry or grain ages before he found a way of preserving milk.

Cutting down of office visits is another advantage of this philosophy, along with the reducing of expense for parents. These infants are seen at six weeks and six months, with adequate time given for examination and instructions. At three and a half and twelve months, the infant is brought in to fulfill his immunization schedule. In addition to mothers loving the routine, they are given the feeling that they are free to call for advice at any time, or bring the baby in, if there is a question of a real illness. Added to this, we have a situation in our office whereby we can baby-sit a 'problem' infant from 8 a.m. till 5 p.m. In the two or three per month experience we have had, we have yet to see a problem baby that wouldn't adjust in the matter of those few hours.

Fewer Dental Problems

This is an advantage not contemplated by me, but brought to my attention by a research dentist at New York's Montefiore Hospital. Dr. Irving Sheppard feels that babies' dental apparatus will thrive best with the exercise attendant upon the early use of solid foods and the abandonment of the practice of changing foods, wherever possible, into liquids and of washing foods down. He foresees a reduction in dental caries, in orthodontic problems, in the necessity for extracting wisdom teeth, if we will only subject our chewing mechanism to what nature intended.

Among disadvantages are those listed in Table V.

TABLE V

1) More allergies
2) Reduction of nursing mothers.
3) Deprivation of parental love.
4) Choking on solid foods.
5) Too early in life to assimilate solids.

The matter of allergies is probably one of the most persistent questions brought to my attention. Many authorities feel that the early giving of solids actually tends to create allergies. The contrary has been my finding in several questionnaires answered by hundreds of mothers. In a personal conversation with Dr. Richard T. Smith, Professor of Pediatrics at Florida University School of Medicine, and a researcher in this field, he has agreed with me in this respect, and even thought it highly possible that we will see less allergies with the early introduction of solid foods. Proof of this, to my mind, is the simple DPT injection, where seldom does a baby manifest any reaction. The same injection given to an adult can be expected to be followed by a *severe* sensitivity or allergic reaction. However, if the DPT shot had been continued at regular intervals through life, say monthly, then this sensitivity would never have been built up. Carrying this reasoning over to foods, I am sure most foods will be given at reasonable intervals and no sensitivity should tend to appear with their regular use.

A review now being done for a current hospital periodical concerning the impact of such an in-hospital schedule on nurseries is being prepared. For such purpose, a survey is being made of some fifty R.N.'s, working in hospital nurseries. Preliminary results would indicate that '6 hour babies,' when solid fed at 2nd and 3rd day in life, would result in better hospital babies, at a considerable saving to the time of the personnel.

While I have had minimal difficulties starting newborns on the six hour schedule and smooth sailing for the first few years of life. I find that after this time difficulties begin to appear. Personally, I believe the point of change comes at the time of allowing the toddling, yes, even the crawling baby out of the playpen. It is for this reason that I urge my mothers to keep the baby in the playpen and to permit him out of it only at her convenience. I remember full well a neighbor of ours remarking with surprise at the sight of our 2½ year old still in the playpen, "How do you do it, my little one screamed his way out at 8 months?" In our case, we had practiced the philosophy of popping the little one into his bed if his unhappiness became so vocal that it disturbed us. He soon understood and continued to be understanding that it was far better to be in the playpen where things were going on, than back in the solitude of his bedroom. His excursions to the outside were only when he was happy and when it suited us.

Another pitfall comes when the baby shows a dislike for a certain previously accepted food. The average parent, puzzled by this new attitude, usually allows the event to pass by without any positive action and the baby finds a new freedom of choice. The one unwanted food becomes many and the previously ideally-eating baby becomes a real feeding problem. I forewarn parents of the certainty of this event and instruct them not to make any ado about it. Screaming, hollering or forcing are verboten. I simply advise mother to remove the uneaten portion of the food, slip it in the icebox and bring it back to the next meal, unwarmed. However, the meal stops right there with the loudly spoken comment, 'You're not very hungry today," and water is the only allowed intake until the next meal. In our own experience, we have only had to do this smple little maneuver once with the girl and probably four times with the boy. What a far cry and difference from my Mother's experience with her four, each one allowed to indulge his own appetite; meal time was usually a contest of endurance! In fact, all through life, there are many incidences when a previously well-behaved baby and child will get off the track. It remains for the parents to resist those dangers. A child appreciates discipline!

It is possible that many of my listeners will say, "Well, there is nothing new here—all this has been tried before—and given up." Yet, much of it is old, and much of it has been tried before and abandoned—and so too, are subsequent theories such as strict sterility, demand theory, vitamins, etc., reaching the discard pile. But like that old X-ray developed picture my mother and I carried to Hartford, that too was given up and discarded, but quite recently I have been seeing more and more Polaroid pictures being taken in the X-ray Department at our hospital. Yes, here the wheel is turning again, bringing us back the developed X-ray picture—who knows but that the disciplined child, the obedient adolescent, and the law respecting adult may once again appear on the scene, if different baby raising tactics are offered than those gracing the demand-permissiveness era. Herein is one—now in use for almost sixteen years, and on nearly 2,000 infants, which offers for me and my patients considerable promise.

Clarity In Medical Writing

The function of language is to convey information accurately and from one mind to another. Let us take a few examples to show how this most elementary function of language is neglected. Here is the kind of statement that nearly every editor of a medical journal would allow: "Unilateral nephrectomy was performed." Most zoologists and all doctors would understand this. Would a botanist or geologist or a dentist or a physicist or a mathematician? Perhaps if he had learnt Greek; but how many now have? If he had, he would be able to translate it into his native tongue as follows: "One-sided kidney cutting was performed." Then why this complicated language? Why not say "One kidney was cut out"? The information conveyed is no less precise; it is more concise; and it is understandable by all. Here is another: "The drug induced natriuresis and kaluresis." This is from a paper by an eminent physiologist in a first-rate physiological journal. Would a neurophysiologist understand, or the average physician, surgeon, or obstetrician? And if not, could they look up the meaning of the words? They could not. Nor, probably, if they were Greek scholars, would their Greek take them all the way. I believe from the data given that this sentence means "the drug increased the excretion, in the urine, of sodium and potassium." This sentence, as interpreted, has the advantage that the information given is accurate and unequivocal and can be understood by all who speak English and know the elements of science. Then why did the author not say so, and why did the editors allow this sentence to pass?

I have chosen these two examples, because the authors in question are investigators of distinction, and men of culture and sensibility, and the journals that published them of the highest standing. These examples make it clear, I hope, that such writing is accepted practice, though a bad practice. Unnecessary and undesirable technical jargon is one of the bad habits of our time. I could have chosen many worse examples.—Pickering, G.: Language: Lost Tool of Learning in Medicine and Science. *Lancet,* 2: 115-119 (July 15), 1961.

THE PRESIDENT'S PAGE

The Practice Of Medicine In 1965—As I See It

On Tuesday, July 27, 1965, Dr. James Appel, President of the American Medical Association, and Dr. Hugh H. Hussey, Director of the AMA's Division of Scientific Activities, appeared before the House Interstate and Foreign Commerce Committee to present Medicine's views on S 596 and HR 31401—the Heart Disease, Cancer and Stroke Amendments of 1965. Our representatives, while fully supporting the intent of this legislation, which is attempting to bring about a reduction in the incidence of heart disease, cancer and stroke through accelerated programs of research, pointed out the vagueness and poor assumptions upon which the legislation is based. Dr. Appel said that the bills' statement that people are not getting the best medical care and not having all the new advances in medicine made available to them is untrue. He discussed the well developed "referral" system of patients, when more specialized care is necessary, from their own physician to individual specialists or already existing medical school and community hospital centers.

Personally, I believe there is already too much emphasis on research and too much of the taxpayers' money spent on projects which are not research at all. Most of these result in the writing of a report which has only one fitting resting place—the wastebasket. For too long it has been too easy for many medical centers to obtain money for research from the national government and then use a good portion of these funds to support other projects which are not research. Today the professors in some medical schools are not teachers but are primarily interested in their "so-called research" which has little or no connection with medical practice.

In many areas of our profession today there is a great tendency to talk more and more about less and less; about many subjects that have little or nothing to do with medical practice, which is, in essence, the giving of service to patients. The over dependence on laboratory and radiological tests with an accompanying loss of emphasis on the patient's symptoms and signs has not only caused the cost of medical care to skyrocket but has led some "experts" to believe that medical care will be improved by the creation of super-medical centers where all disease problems will be diagnosed and treated properly. We all know that this is pure nonsense.

What is needed today to improve patient care is fundamentally the same as it was twenty years ago, i.e., a good history followed by a complete physical examination. After this we should obtain appropriate laboratory tests or examinations when needed to complete the diagnosis so that proper care can be instituted. Recently I examined a patient on whom I had done rectal surgery ten years ago. She came to me following a "complete" physical examination by a physician who examined her only from the waist up. The patient herself decided she should have an examination "below the waist." Another recent case was one of a patient who had symptoms of gall stone disease and who came with cholecystograms showing his gall stones and poorly functioning gall bladder. His physician had ordered the X-rays and then told him to choose a surgeon to remove his gall bladder which was diseased. In examining the patient, I found a readily palpable large mass in the right lower quadrant which was obviously a tumor of the cecum and, on exploration, proved to be extensive carcinoma. The patient still has his gall bladder, which was insignificant compared to his real disease.

We all see cases like this. To me they emphasize the need for reminding ourselves that if we use the methods we know so well we will solve many of the problems which confront us today. The fundamentals combined with the proven new developments will continue to give the U.S. citizen the best medical care in the world.

James R. Cullen, M.D.

IMPORTANT **PLEASE READ** **IMPORTANT**

ALL SELF-EMPLOYED PHYSICIANS ARE NOW UNDER SOCIAL SECURITY

The Social Security Amendments of 1965, which also embody the several parts of the Medicare Law, contain an important non-medical provision which may have escaped the notice of some members of the Society who are self-employed. The legislation has placed all such physicians under the Social Security System, retroactive to January 1, 1965. This inclusion is compulsory, and there will be no exceptions.

On a short-range basis, this means that by April 15, 1966 (the last date for filing 1965 income tax returns) each self-employed physician who earned up to $4,800 during 1965 must pay a Social Security tax in the amount of $259.20. For 1966, the rate will increase from 5.4% to 6.15% and the taxable base from $4,800 to $6,600. Hence, the SS contribution for 1966 will be $405.90. Thereafter (and presuming that there are no further changes made) his annual tax-rate and tax will be as follows:

Years	*Tax Rate*	*Amount*
1967-68	6.40%	$422.40
1969-72	7.10%	$468.60
1973-75	7.55%	$498.30
1976-79	7.60%	$501.60
1980-86	7.70%	$508.20
in and after 1987	7.80%	$514.80

If the physician earns less than $6,600 in any of these years, the amount of tax will naturally be proportionally less.

Also on a short-range basis, the physician will be liable to pay his half of the increased Social Security taxes for all of his employees. This means that for any employee he pays up to $6,600 a year (in 1966 and thereafter) his maximum liability will increase from $174.00 in 1965 (base $4,800) to $277.20 in 1966 and, by the same "easy stages", to $372.90 in 1987 and beyond.

From a long-range standpoint, of course, the self-employed physician will gradually gain entitlement to certain cash benefits offered by the Social Security program, which may be of the retirement, disability or survivor types. Since most self-employed physicians will be "starting from scratch" with respect to such entitlement, it is not known at this time just when they may become eligible to receive such benefits or under what conditions.

For detailed factual information concerning this new tax-and-benefits program for self-employed physicians, it is strongly recommended that you address all inquiries to the local Social Security office covering your community of residence or practice.

FORTIETH CONNECTICUT CLINICAL CONGRESS

of the

CONNECTICUT STATE MEDICAL SOCIETY

and the

YALE UNIVERSITY SCHOOL OF MEDICINE

Yale-New Haven Medical Center
Mary S. Harkness Memorial Auditorium
333 Cedar Street
New Haven, Connecticut

FRIDAY, SEPTEMBER 24, 1965

GENERAL INFORMATION

Registration:

Registration will begin at 9:00 A.M. The registration fee of $5.00 provides for admission to all sessions of the Congress.

Hospital residents, interns, and medical students will be admitted without charge, if a statement of their position, signed by an official of the hospital or school is presented at the registration desk.

Meeting Place:

All sessions will be held in the Mary S. Harkness Memorial Auditorium in the Sterling Hall of Medicine at the Yale-New Haven Medical Center. The entrance is at 333 Cedar Street. This comfortable auditorium will accommodate an audience of 450.

Telephone:

Telephone messages will be received at New Haven 562-1161, Extension 440.

Luncheon:

Luncheon for visiting physicians will be available in the Memorial Unit Cafeteria.

Parking:

There are pay parking areas for visitors adjacent to the Oak Street Connector between York Street and Park Street, behind the Memorial Unit, and also on Howard Avenue.

The Yale-New Haven Medical Center is about one-half mile west of the New Haven Green. It is easily reached from the Connecticut Turnpike (via Exit 47) or from Wilbur Cross (via Exit 61) or Merritt Parkway (via Exit 57)

Come for the Weekend—Attend the Clinical Congress on Friday, and the following activities on Saturday, September 25th—Surgical and Medical Grand Rounds at the Yale-New Haven Medical Center on Saturday morning and the University of Connecticut-Yale Football game on Saturday afternoon. Tickets may be obtained from the Yale Athletic Association, Yale Station, New Haven. Reserved Seats $4.00—General Admission $2.00.

Address inquiries to
Connecticut State Medical Society
160 St. Ronan Street
New Haven, Connecticut 06511

PROGRAM

FRIDAY, SEPTEMBER 24, 1965

MARY S. HARKNESS MEMORAL AUDITORIUM

9:00 Registration (Coffee will be served until 9:30)

Morning Session

9:45 WELCOME AND OPENING REMARKS:
James R. Cullen, *President, Connecticut State Medical Society*

ADVANCES IN THE TREATMENT OF INFECTIONS
Elisha Atkins, *New Haven, presiding*

10:00 BACTERIAL INFECTIONS
Abraham I. Braude, *Pittsburgh; Professor of Medicine, University of Pittsburgh; Attending Physician, Presbyterian-University Hospital*

10:30 VIRAL INFECTIONS
Edwin D. Kilbourne, *New York City; Professor of Public Health, Cornell University Medical College; Associate Attending Physician, New York Hospital*

11:00 PANEL DISCUSSION
Moderator: Elisha Atkins, *New Haven; Associate Professor of Medicine, Yale University School of Medicine*
Panelists: Abraham I. Braude—Edwin D. Kilbourne
Vincent A-T Andriole, *New Haven; Assistant Professor of Medicine, Yale University School of Medicine*
Dorothy M. Horstmann, *New Haven; Professor of Epidemiology and Pediatrics, Yale University School of Medicine*

11:45 INTERMISSION
John C. Leonard, *Hartford, presiding*

12:00 CLINICAL PATHOLOGICAL CONFERENCE
Pathologist: Marvin Kuschner, *New York City; Professor of Pathology, New York University School of Medicine; Director of Laboratories, Bellevue Hospital Center*
Radiologist: Gilbert S. Melnick, *New Haven; Assistant Professor of Radiology, Yale University School of Medicine*
Discussant: Jacob Fine

1:00 Luncheon

Afternoon Session

ADVANCES IN THE TREATMENT OF SHOCK
William W. L. Glenn, *New Haven, presiding*

2:30 CARDIOGENIC SHOCK
Myron H. Luria, *Chicago; Research Associate, Cardiovascular Institute, Michael Reese Hospital and Medical Center*

3:00 SHOCK DUE TO INFECTION
Jacob Fine, *Boston; Professor of Surgery, Harvard Medical School; Director of Surgery, Beth Israel Hospital*

3:30 HEMORRHAGIC AND TRAUMATIC SHOCK
Richard C. Lillehei, *Minneapolis; Associate Professor of Surgery, University of Minnesota Medical School*

4:00 PANEL DISCUSSION
Moderator: William W. L. Glenn, *New Haven; Professor of Surgery, Yale University School of Medicine*
Panelists: Myron H. Luria—Jacob Fine—Richard C. Lillehei

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ACCIDENT AND HEALTH PLAN

In addition to the above, members up to age 40 may now purchase their Accident and Health protection at a 25% reduction in cost.

Through its continued official sponsorship of our Group Plans, The Connecticut State Medical Society has once again made it possible to offer broadened coverage under these two time-tested policies to members of the Society. If you are not now enrolled, do not turn your back on old friends who have served Connecticut physicians for over a quarter of a century. If a sufficient number of new applications are submitted for the Major Medical Expense Plan, all policies will be issued regardless of past medical history. For full information write or phone.

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James G Burch
Director of Public Relations

Josephine P. Lindquist
Assistant to General Manager

SUMMARY OF ACTIONS COUNCIL MEETING

Wednesday, July 21, 1965

I. Attendance

Present in addition to the Chairman, Dr. S. J. Martin, were: Drs. Hess, Bradley, W. Martin, Weise, Sr., M. Caplan, Gardner, Brandon, Pitock, Rogol, Grendon, Egan, H. Caplan, Spitz, Shepard, Nolan, Ciccarelli, Cramer, Fabro, Petrie, Hastings and Roch. Also present were: Mrs. Lindquist, Mr. Burch, Mr. Chilcoat (AMA) and Dr. Richards. Absent were: Drs. Cullen, Goldberg, Davis, Hughes, Ayres, Epstein, Abbot and Wilson.

II. Routine Business

Approval Of Minutes

As printed and distributed, it was VOTED to approve the minutes of the meeting of May 20, 1965.

Life Membership

It was VOTED to approve applications for Life Membership of the following eligible Active Members of the Society:

Madeline Fiske, South Salem, New York (F)
Edward F. Malloy, Stamford (F)
Voyle Paul, Stamford (F)
Alexander Sollosy, Bridgeport (F)
Maurice N. Levy, Bridgeport (F)
Eugene Kelemen, Camarillo, California (F)

CSMS Dues Exemptions

It was VOTED to approve requests for exemption from payment of CSMS membership dues as follows:

Edward W. Allen, Old Lyme—NLCMA—1965—Postgraduate education
Samuel J. Cornett, Cromwell—MCMA—1965-66—Postgraduate education

Election Of Student Member

It was VOTED to elect to student membership Mr. Stephen J. Richman of New London. Mr. Richman is attending the Boston University School of Medicine, Class of 1966.

Committee Resignations, Appointments, Etc.

Committee on Public Health: It was VOTED to appoint Gunar N. Bohan, Meriden, to membership on this Committee for 1965-66.

Committee on State and National Public Relations: It was VOTED to accept the resignation of William G. Leeds, West Hartford, from membership on this Committee. It was further VOTED to request Kenneth F. Brandon, Speaker of the House, to recommend a replacement for Dr. Leeds at the next meeting of the Council.

Editorial Committee, Connecticut Medicine: It was VOTED to accept the resignation of Theodore Lidz, New Haven, as a member of this Committee, and further VOTED to appoint Stephen Fleck, New Haven, to replace Dr. Lidz on the Committee for 1965-66.

Representative To Meeting Of AMA Committee On Disaster Medical Care

It was VOTED to designate John Shoukimas, Hartford, Chairman of the CSMS Committee on Disaster Medical Care, to attend this meeting as a representative of the Society, to reimburse him for usual expenses in the approximate amount of $150, and to request him to file a report with the Council on the proceedings of the meeting. Place: Washington, D. C. Date: August 7-8, 1965.

Representatives To AMA National Congress On Medical Ethics And Professionalism

It was VOTED to designate the following to attend this Congress (Chicago, October 2-3, 1965) as representatives of the Society:

J. Alfred Fabro, Torrington
Jacques H. Green, North Haven
E. Tremain Bradley, Norwalk
Benjamin Wiesel, Hartford
William R. Richards, New Haven

It was further VOTED to reimburse these representatives for usual expenses jointly with the AMA (which will pay full expenses for three), and to authorize the Chairman to make substitute appointments should the number able to attend the Congress fall below three.

Representative To AMA Public Relations Workshop

It was VOTED to authorize Luca E. H. Celentano, PR Division Chairman, or his designate, to attend the AMA PR Workshop, Chicago, August 18-20, 1965, and to reimburse him for usual expenses incurred by his attendance.

Representative To AMA-ANHA Institute On Nursing Home Care

It was VOTED to direct the Chairman to appoint a representative of the Society to attend this Institute, Boston, September 8-10, 1965, to reimburse the representative for usual expenses, and to request him to file a report with the Council on the proceedings of the meeting. The Institute is being sponsored jointly by the AMA and the American Nursing Home Association.

Representative To National Meeting Of State Health Careers Councils

It was VOTED to authorize Bernard F. Mann, Jr., Chairman of the CSMS Committee on Health Careers, to represent the Society at this National Meeting, sponsored by the National Health Council, Detroit, September 23-25, 1965, to reimburse Dr. Mann for usual expenses (estimated at $200) incurred by his attendance, and to request him to file a report with the Council on the proceedings of the meeting.

Membership—U. S. Chamber Of Commerce

It was VOTED to renew the Society's membership in the U. S. Chamber for the coming year, and to authorize payment of membership dues in the amount of $600.

III. Old, New And Special Business

Dates And Place For 1966 CSMS Annual Meeting

It was VOTED to designate the Hotel Statler Hilton, Hartford, as the place at which to hold the 1966 Annual Meeting of the Society, and to set April 26-27-28, 1966 as the dates for same.

Reports—CSMS Committee On Hospitals

It was VOTED to accept reports and recommendations of the Committee on Hospitals as follows:

(1) *"Hospital and Related Health Facilities Survey and Planning Commission":* Pursuant to several earlier progress reports on this subject, the Committee now reports that the Connecticut Hospital Association has completed plans for establishing and operating a Planning Commission of this nature and that the plans were approved for implementation at the annual meeting of CHA on June 16, 1965. Having reviewed the prospectus of the plan, the Committee recommends that the Council reaffirm its previous policies in this regard; i.e., that each of the component county medical associations be urged to seek active participation in any local or regional hospital planning activities operating in its area, and that the Council continue to remind the Board of Trustees of CHA of its keen interest in all activities relating to hospital planning and of its desire to be invited to provide representatives to participate in such activities on a statewide basis.

It is understood that CHA will shortly invite the Council to nominate physicians for service as members of the Board of its newly-formed Planning Commission. Members of the Council were asked (informally) to gather and submit the names of physicians who would be interested in and qualified for such service pending receipt of the formal invitation from CHA.

(2) *"Proposed Survey of Care of Children in Connecticut Hospitals":* The Committee apprised the Council of this proposed survey, which is sponsored by the Connecticut Chapter of the American Academy of Pediatrics and is to be conducted by the State Department of Health through the Maternal and Child Health Section. The Committee recommends CSMS approval of the survey, and the designation of Arnold H. Becker, Bristol—a member of the Committee—to be an official representative of the Society to participate in and report on the activities of the survey.

(3) *Proposed Study of the Medicare Law and the DeBakey Commission Report:* In accepting this report on the wishes of the Committee to engage in studies of these two important pieces of legislation insofar as the impact and effects of their implementation in Connecticut may be felt by physicians in their relationships with hospitals, it was VOTED to authorize the Committee to undertake such studies and to advise the Committee that, at present, no other committees are exploring the specific area of physician-hospital relations with respect to these measures, if and when they become laws.

Report—Ad Hoc Committee To Evaluate Journal "Readership Survey" Results

Reporting for the Ad Hoc Committee, Orvan W. Hess, Chairman, advised the Council as follows:

(1) That, in the Committee's opinion, the results of the "Readership Survey" did not warrant a conclusion that the Journal should be discontinued as the principal publication of the Society or that its present scientific format should be modified appreciably.

(2) That, therefore, the question is not *whether* the Society should continue to publish the Journal but whether it can afford to do so in the light of present excess of expense over income (nearly $20,000 in 1964).

(3) That to attempt to place the operation of the Journal on a more nearly self-sustaining financial basis, the following measures be implemented:

a. Consultation of the Editor and Business Manager with the printer to determine what economies in production costs might be realized (quality of paper, number of words per page, etc.)

b. Seeking of additional sources of revenue, particularly through the medium of adopting a more "liberal" policy with respect to the types of goods and services for which ads may be accepted (tobacco products other than cigarettes, alcoholic beverages, sporting equipment, clothing, toiletries, etc.).

c. A review of the Journal's financial picture prior to the preparation of the 1967 budget to determine if the foregoing measures have been reasonably effective in reducing the net costs which must be met directly out of membership dues.

It was VOTED to accept the report of the Ad Hoc Committee and to implement the recommended measures contained therein.

"Guiding Principles For Pharmacist-Physician Relationships"

The Joint Conference Committee of CSMS and the Connecticut Pharmaceutical Association submitted a document titled: "Guiding Principles for Pharmacist-Physician Relationships in Connecticut," with the request that the Council approve the text of the document and indicate its willingness to cooperate with the Connecticut Pharmaceutical Association in financing the production of the document in pamphlet form and its distribution to all members of both professions in the State and for future distribution to pharmacists and physicians who successfully pass their examinations for licensure. It was VOTED to approve the text of the document, and to express to the officials of the CPA the Society's willingness to consider a plan for printing and distributing the "Guiding Principles," when developed, which would call for joint financing of the project by CSMS and CPA.

HEW Health Examination Survey—Hartford And Tolland Counties

Having been apprised by the Department of Health, Education and Welfare that a health examination survey of selected children, ages 6-11, will be conducted by HEW in the Hartford-Tolland area during the month of August, it was VOTED to hold no objection to reprinting in the Journal an HEW press release which outlines the nature and modus operandi of the project. Apparently no local health facilities or medical personnel will be asked to participate. Results of the survey of each child will be sent to the family physician on request.

Advertising And Solicitation By Chiropractors

The General Manager reported the receipt of several communications from business people, other lay individuals and physicians which offered evidence that at least two chiropractors in the State have been soliciting "business" for themselves by sending out advertisements through the mail to various industries, heads of families, etc. These communications were forwarded to the Secretary of the Chiropractic Examining Board, via the Commisisoner of Health, for a ruling as to the ethical nature of this practice. It is understood that such advertising has been ruled to be unethical by the CEB and that the offenders have agreed to "cease and desist" in the future. Since the matter appeared to have been resolved, it was VOTED to take no further action at this time.

Resolution Re Tax Discrimination—Greenwich Medical Society

Transmitted to the Council through E. Tremain Bradley, former Councilor from FCMA, a resolution recently adopted by the Greenwich Medical Society was considered. In substance, the resolution called for the Society to "strongly support amendments to the present Keogh Law (which would) liberalize the terms under which an individual professional person may set up a retirement plan . ."; for the Society to "support legislation requiring the Internal Revenue Service to recognize professional corporations in the same light as other business corporations for tax purposes . ."; and for the Society to notify the CSMS Committee on National Legislation and each senator and representative from Connecticut of this position of support for such measures.

Noting that the AMA continues to work actively in support of amendments to the Keogh Law which would achieve these objectives if enacted (specifically HR 10, HR 697 and S 177), it was VOTED to approve the intent of the Greenwich Society's resolution (amended to include not only "professional people" but also "other self-employed persons"), and to request the Committee on National Legislation to take proper steps to bring the CSMS position on tax discrimination to the attention of members of Congress from Connecticut and of other legislators as indicated.

Recommendation Re Cigarettes—Committee On Public Health

Having reviewed pending Federal legislation which proposes to give the Food and Drug Administration the authority to require that health warning labels be placed on all cigarette packages and also to regulate cigarette advertising by this and other means, the Committee recommended that the Council adopt a position on this legislation as follows:

1. Reaffirm the resolution concerning cigarette smoking passed by the House of Delegates in December of 1963.
2. Endorse the principle of S 547 insofar as placing a caution legend on each package of cigarettes as a useful adjunct to public education concerning the relationship of tobacco and health.
3. Recommend that further regulation dealing with the subject not be delegated to appointed officials of the federal government but be designated by the Congress after a suitable hearing.

It was VOTED to approve the recommendations submitted by the Committee but, since the legislation had been already enacted in substantially the form recommended, to take no further action in this matter at this time.

Recommendation—Committee On Third Party Payments

As recommended by Howard K. Ente, Chairman, it was VOTED to authorize the Committee on Third Party Payments to arrange and conduct one or more meetings between the members of all CSMS committees having to do with government-operated medical programs and authorized representatives of all sections and groups that participated in the CSMS Relative Value Study, for the purpose of developing uniform "suggested conversion factors (to be applied to the Relative Value Schedule) which they believe are appropriate in assisting governmental third parties to develop (payment) schedules that conform with the principle of parity of payments to physicians in the State, in line with 'usual and customary' charges."

While Dr. Ente suggested the month of September as a tentative time for scheduling this meeting, the Council expressed the hope that it might be held as soon as possible in order that committees already under direction to negotiate such payment schedules can proceed in their assignments without undue delay.

1965-66 Military Dependents' Medicare Contract

The Council was informed that the 1964-65 Medicare Contract expires on August 31, 1965 and that, as of July 21, the Advisory Committee on Medicare Plan had made no recommendations for changes to be sought in the contract for 1965-66. In the light of new CSMS policy established by the House of Delegates in adopting the Relative Value Schedule, it was VOTED not to approve a Medicare Contract which did not reasonably reflect the principle of parity of payments to physicians, in line with their "usual and customary" charges. It was further VOTED to request the Medicare Committee and the Committee on Third Party Payments to review the present Medicare Contract in terms of this new policy and to make recommendations to the Council regarding a revised payment schedule which would reflect that policy. Since it appeared doubtful that this undertaking could be completed by the named committees before August 31 (the expiration date of the present Contract), it was VOTED to request a six-months' extension of the 1964-65 agreement from ODMC in order that there will be no interruption of benefits paid on behalf of eligible military dependents.

Planning Committee—"Connecticut Health Careers Council"

Having received notice from Bernard F. Mann, Jr., Chairman of the CSMS Committee on Health Careers, that the incorporation of the "Connecticut Health Careers Council" had been temporarily postponed and that further planning for that organization must be undertaken, it was VOTED to request Dr. Mann to serve as the official CSMS representative, and to authorize the payment of $15 to the CHCC planning committee to help defray its incidental expenses. In taking these actions, the Council reaffirmed its support of the purposes of the proposed statewide health careers council.

Report On AMA House Of Delegates Meeting, June 20-24, 1965

Drs. Gardner, Weise, M. Caplan, Bradley and Richards reported to the Council on various happenings and actions which took place at the annual meeting of the AMA House of Delegates in New York, June 20-24, 1965. Most of these matters have been (or will shortly be) reported to the general membership of the Society through *AMA News,* the *JAMA,* etc. In addition to the AMA House's actions on "medicare" and the DeBakey Commission Report, the Delegates et al brought to the attention of the Council a number of other matters on which state and county components have been asked to take suitable action. The latter included: Tax discrimination against physicians, statewide hospital planning, organization of the House of Delegates, cancer registries, payment of interns and residents by Blue Shield plans, formation of state associations for the professions, etc.

With respect to these and other resolutions emanating from the New York meeting of AMA, it was VOTED to direct the General Manager to refer each such resolution to an appropriate CSMS standing or special committee, if one exists, for study and report to the Council. In instances where no appropriate committee is in being, it was

VOTED to direct the Chairman to appoint one to deal with that resolution on an ad hoc basis.

Incidental to the reporting on the proceedings of the AMA House of Delegates, it was brought to the attention of the Council that legislation proposing to implement certain recommendations of the DeBakey Commission Report (setting up networks of regional diagnostic, treatment and research centers for dealing with heart disease, cancer, stroke and other diseases to be determined), was now being heard by the House Committee on Interstate and Foreign Commerce. It was VOTED to direct the General Manager to send a telegram to the Chairman of the Committee urging that action on this legislation (HR 3140) be deferred until further study has more definitely established a true need for such regional centers.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on July 21, 1965. Detailed minutes of the meeting are on file at 160 St. Roman Street, New Haven, for perusal by any interested member of the Society.*

NEW MEMBERS

LITCHFIELD COUNTY

Jean Anderson, New Milford
W. Frederick Lahvis, New Milford
Robert L. MacDonald, Roxbury
Roland W. Smith, Sharon

PLACEMENT WANTED

ANESTHESIOLOGIST — Board certified, 34 years of age, military obligations completed, would like to establish practice with either partner or group. Will also set up solo practice, if area requires. Connecticut license.

ANESTHESIOLOGIST — Board certified, 34 years of age, would like to practice with either group or partner in a town or city that would afford the opportunity to be active in the clinical aspects of anesthesia as a member of a hospital staff, as well as participation in a training program for interns and residents.

OBS.-GYN.—33 years of age, Board eligible, Connecticut license, wishes to practice with a partner or as an assistant to Connecticut Obs.-Gyn. specialist.

INTERNIST—32 years of age, recently completed residency, military obligations satisfied. Wishes to practice primarily with a group or partner, available immediately. Board eligible in Internal Medicine.

UROLOGIST—Board certified, 34 years of age, University trained, would like to practice either with a partner or group. Well trained, with extensive hospital training, presently instructor at large University hospital medical center in Urology.

GENERAL SURGEON — Board certified, Connecticut license, 33 years of age, excellent Univeristy training. Would like to join partner or group with an especial emphasis on vascular surgery.

PLACEMENT OPPORTUNITIES

MIDDLETOWN, CONN. is seeking physician to fulfill community needs. Gen'l. Pract., Pediat., Orthopedist, E.N.T., Ophth., Neurosurgeon and Neurologist are needed to establish private or partnership practice — qualified men will receive appointments in fully accredited 255 bed general hospital. For details, write: President, Medical Staff, Middlesex Memorial Hospital, Middletown, Conn.

OPHTHALMOLOGIST, PEDIATRICIAN — Opportunity for Board eligible or Board certified ophthalmologist and pediatrician to join a group of physicians now being formed for occupancy in newly completed building. Large University hospital and one other hospital near by.

PEDIATRICIAN and ORTHOPEDIST—Board eligible or Board certified pediatrician and orthopedist needed in Winsted, Conn. area. This area is served by a small, fully accredited hospital and provides an excellent opportunity for practice.

STAFF PHYSICIAN—Internist or generalist to join medical group in fully accredited, comprehensive medical rehabilitation inpatient facility adjacent to large university medical center. Inquiries invited from young men completing residency or military service in 1964 and 1965. Address: Director, Gaylord Hospital, Box 400, Wallingford, Connecticut.

CHIEF, HOSPITAL SECTION—to head program of inspecting and licensing medical care facilities in the state as required by statute; directs the Hill-Harris program at state level. Requires completion of general internship in A.M.A. approved hospital plus a combination of experience totaling five years and made up of one or several of the following elements: up to two years in an approved residency in any field in a hospital with a teaching or educational program; up to two years of graduate study in hospital administration or public health; employment in hospital administration; experience as a staff committee member or on any staff service while holding full hospital privileges. Reply to B. Dearington, Connecticut State Department of Health, 79 Elm Street, Hartford. EQUAL OPPORTUNITY EMPLOYER.

PSYCHIATRISTS AND GEN'L. PRACTITIONERS desirous of part-time or full-time employment in a modern progressive State Mental

Hospital are needed. Please contact: John F. Lowney, Jr., M.D., Superintendent, Connecticut Valley Hospital, Box 351, Middletown, Connecticut.

PHYSICIAN and INTERNIST for Chronic Disease, Cancer and Tuberculosis Hospital. Must have Connecticut license and board eligibility or equivalent experience. Salary range $13,420 to $17,600. Three bedroom, two bath apartment available with maintenance at minimal cost. Liberal fringe benefits and insurances. Reply to: Uncas-On-Thames Hospital, Norwich, Connecticut.

OCCUPATIONAL PHYSICIAN for state employees' clinic located in Hartford, 35 hour week, 3 weeks vacation, up to 120 days sick leave, paid insurance program, social security and liberal retirement. Requires at least two years' general practice. Starting salary $12,040 going up to $13,000 at the end of first year, then advancing $560 annually to maximum of $15,080. Reply directly to B. Dearington, Connecticut State Department of Health, 79 Elm Street, Hartford, Connecticut. EQUAL OPPORTUNITY EMPLOYER.

ANYONE INTERESTED IN THE ABOVE IS ASKED TO CONTACT THE GENERAL MANAGER'S OFFICE, 160 ST. RONAN STREET, NEW HAVEN.

1965 MEETINGS

September 24—40th Clinical Congress to be held in Mary S. Harkness Auditorium at the Yale University School of Medicine, New Haven. The program will be devoted to "Advances in the Treatment of Infection" and "Advances in the Treatment of Shock".

October 10—The annual scientific meeting of the American College of Nutrition will be held at the Americana Hotel in New York City on Sunday, October 10, 1965, at 10 a.m. For further information, please contact Robert A. Peterman, M.D., F.A.C.N., Secretary, 3 Craig Court, Totowa Borough, New Jersey 07512.

October 28 — 182nd Semi-Annual Meeting of The New Haven County Medical Association will be held at the Waverly Inn, Cheshire, Connecticut. The Business Meeting is tentatively scheduled for 3:30 P.M. Further details will be furnished as soon as arrangements are completed.

November 3-5—New England Postgraduate Assembly will be held at the Statler-Hilton Hotel, Boston, Massachusetts.

December 8—Connecticut Society of American Board Surgeons Annual Meeting to be held at the Hotel America in Hartford, Connecticut.

1966 MEETINGS

April 26-28—174th Annual Meeting of the Connecticut State Medical Society to be held at the Statler-Hilton Hotel, Hartford, Connecticut.

Doctor's Office

Marvin S. Arons, M.D., announces the opening of an office for the practice of plastic and maxillofacial surgery and reconstructive and hand surgery at 513 Doctors Building, 2 Church Street South, New Haven.

Albert J. Casale, M.D., announces his association with Vincent J. Turo, M.D. and John D. Haugh, M.D. in the practice of bone surgery at 140 Woodland Street, Hartford.

A. L. Delgrego, M.D., C. V. Pantaleo, M.D. and H. D. Batt, M.D., announce the removal of their office from 291 Whitney Avenue to 2447 Whitney Avenue, Hamden

Harold O. Douglass, Jr., M.D., announces his association with Allan J. Ryan, M.D. in the practice of surgery at their offices in Meriden, Wallingford and Cheshire.

Leon P. DuPlessis, M.D., announces the opening of an office for the practice of internal medicine and gastroenterology at 51 Gillett Street, Hartford.

Walter R. Hampton, M.D., announces the opening of an office for the practice of internal medicine at 720 Hopmeadow Street, Simsbury.

Harry A. Inder, M.D., announces the reopening of an office for the practice of obstetrics and gynecology at 2839 Main Street, Bridgeport.

Thomas E. Liptak, M.D., announces the removal of his office for the practice of internal medicine to 3129 Main Street, Stratford.

Alexander H. Pinkes, M.D., announces the opening of an office for the practice of internal medicine at 41 Trumbull Street, New Haven.

Irving Marvin Polayes, M.D., announces the opening of an office for the practice of plastic and reconstructive surgery, maxillofacial surgery and surgery of the hand at 100 York Street, New Haven.

M. G. Tager, M.D., announces his association with R. Glenn Wiggan, Jr., M.D. in the practice of urology at 85 East Avenue, Norwalk.

DOCTOR — Does your wife like to read the Auxiliary news? Then be sure and take your copy home.

WOMAN'S AUXILIARY

President
Mrs. William R. Richards, Hamden

President-Elect
Mrs. John D. O'Connell, West Hartford

First Vice-President
Mrs. James F. Jones, Danielson

Second Vice-President
Mrs. Ralph T. Tella, Stamford

WOMAN'S AUXILIARY · CONNECTICUT · STATE · MEDICAL · SOCIETY

Recording Secretary
Mrs. Nicholas Creaturo, Trumbull

Corresponding Secretary
Mrs. Anthony Cipriano, Hamden

Treasurer
Mrs. Stephen A. Hulme, West Hartford

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Mrs. G. Prentiss Lee, 5805 S. W. Brugger, Portland, Oregon 97219.

Historian:
Mrs. C. Rodney Stoltz, 710 Third Street, N. W. Watertown, South Dakota 57201.

Parliamentarian:
Mrs. Herbert L. Mantz, 1209 Romany Road, Kansas City, Missouri 64113.

Executive Secretary:
Miss Margaret N. Wolfe, 535 N. Dearborn Street, Chicago, Illinois 60610.

Resolution on Architectural Barriers Adopted at 1965 Convention of the Woman's Auxiliary to the American Medical Association, Inc.

Whereas: Public buildings are constructed for the purpose of serving all of the Public, and

Whereas: The architectural design of many public buildings includes such things as narrow elevator doors, narrow corridor doors, long steep flights of steps and other things which impede the movement of handicapped persons in and around such public buildings, therefore

Be It Resolved: That this problem be brought to the attention of proper public officials so that new construction and remodeling will include such modification in design so as to make the movement of the handicapped easier.

AROUND THE STATE

Dr. Allan J. Ryan To Join University Staff

Dr. Allan J. Ryan, who has practiced general surgery in Meriden for 20 years, will leave shortly to accept an appointment on the faculty of the University of Wisconsin in Madison, Wisconsin.

His new position will enable him to concentrate on sports medicine, a field in which he has had a major interest for many years. At the University of Wisconsin, Dr. Ryan will have direct medical supervision of all university athletes. He will also organize and direct a pioneer program in sports medicine, the first such program in the country.

Dr. Ryan will hold an appointment as associate professor of surgery at the University of Wisconsin Medical School. He will also lecture on sports medicine in the Graduate School of Physical Education. In addition, he will teach sports medicine in the medical school and will set up a post graduate program of sports medicine for physicians in the years ahead.

"This is the first time any program as comprehensive as this has been undertaken in the field of sports medicine in the United States, and I am looking forward to it," said Dr. Ryan.

A college athlete himself (track), Dr. Ryan has been a member of the American Medical Association's Committee on the Medical Aspects of Sports for ten years. He is also a member of the AMA's Committee on Exercise and Physical Fitness. He is a Fellow and past president of the American College of Sports Medicine. His book, "Medical Care of the Athlete," published by McGraw Hill in 1962, is a standard work on the subject.

Dr. Ryan received his medical degree at Columbia University College of Physicians and Surgeons in 1940 and his residency training at Long Island College Hospital. He is a graduate of Yale University.

News From Connecticut State Department Of Health

Streptococcal sore throat affected 233 Connecticut people during the weekending July 31, according to reports from local directors of health, said Franklin M. Foote, M.D., Commissioner, Connecticut State Department of Health. This was a drop from 268 the week before and the second lowest week's report since the week ending November 17, 1964, when there were 215 cases.

Trichinosis, a completely preventable parasitic disease, affected the eleventh Connecticut resident so far this year. Dr. Foote said that people make the mistake of assuming that only pork products need thorough cooking. The trichina organism may be present in ground beef products that have been contaminated through processing in grinding machines that had particles of infected pork in them.

Gonorrhea cases sagged somewhat to 45 from 64, but syphilis remained static at nine.

Infectious hepatitis was four, compared with five, chickenpox 59 against 57, measles 15 against 10, and German measles was 11, down from 25 the week before.

News From Yale University School Of Medicine

A grant of $75,000 from the John A. Hartford Foundation, Inc. to implement and support a genetics laboratory and clinic in the Yale School of Medicine was announced jointly recently by Ralph W. Burger, President of the New York foundation, and Dr. Vernon W. Lippard, Dean of the medical school.

The three-year grant is specifically earmarked for equipment and administrative service of the laboratory-clinic, which will embrace a new Section of Medical Genetics in the School's Department of Medicine. Facilities will be located in the Laboratory of Clinical Investigation, a 10-story, $3,445,887 structure scheduled for completion at the Yale-New Haven Medical Center this fall.

The new genetics laboratory-clinic will provide facilities for the diagnosis and treatment of patients with hereditary diseases, and for genetic counseling. Among its equipment will be special biochemical instruments for studying amino acids, and apparatus for tissue culture and the study of human chromosomes.

This is the third medical grant here from the John A. Hartford Foundation in recent years. In 1961 the Foundation made a grant of $156,767 to Grace-New Haven Community Hospital to implement a major cardiovascular diagnostic center and service, and in 1962 provided $170,634 for a laboratory and clinical study of rheumatoid arthritis.

Dr. Herbert A. Lubs, Jr., Assistant Professor of Medicine, is named chief investigator in the grant for the genetics laboratory-clinic. Associated with him will be Dr. Leon Rosenberg, currently with the National Institutes of Health (NIH), who will join the Yale Medical School faculty as an Assistant Professor of Medicine in September.

Much of Dr. Lubs' research will center on chromosome abnormalities which result, among other things, in Mongolian idiocy. Dr. Rosenberg will be especially interested in biochemical genetic abnormalities; one of his major studies will involve patients with gentically-determined abnormalities of absorption of amino acids.

Dr. Lub's past research has embraced such areas as normal and abnormal human chromosomes, chromosome abnormalities in human tumors, and inheritance of genetic disease. His work has been supported by the U. S. Public Health Service and by a Veterans Administration Clinical Investigatorship. From 1960 to 1963 he was a Clinical Investigator at the Veterans Administration Hospital in West Haven, Connecticut.

Special Notices

CLINICAL SOCIETY OF THE NEW YORK DIABETES ASSOCIATION

October 16, 1965

Barbizon-Plaza Hotel, 106 Central Park South,
New York, N. Y. 10019
9:30 A.M.-5:15 P.M.

SYMPOSIUM ON DIABETES

November 4, 1965 — 1 P.M. - 5 P.M.

Sponsored by:
Hebrew Home For Aged, Inc. Hartford, Connecticut
Speakers: Max Ellenberg, M.D.
Attending Physician, Mt. Sinai Hospital, New York City.
Rachmiel Levine, M.D., Dean, New York Medical College.
Alexander Marble, M.D.
Attending Physician, Joslin Clinic, Boston, Massachusetts

LOOK FOR FUTURE ANNOUNCEMENTS FOR SPECIFIC DETAILS.

ANCKER HOSPITAL PROGRAM

November 11, 12, 13, 1965

The Inaugural Scientific program of the new Ancker Hospital (Saint Paul-Ramsey Hospital), St. Paul 2, will be held on November 11, 12 and 13, 1965. The program will include two days of general medical meetings and one-half day specialty meetings.

The principal address will be given by Dr. Martin Cummings, Director, National Library of Medicine.

AMERICAN COLLEGE OF PHYSICIANS

Presents Postgraduate Course No. 2

MORPHOLOGIC BIOCHEMICAL AND CLINICAL ASPECTS OF HEPATIC DISEASE

October 11-15, 1965

At Mount Sinai Hospital, Kling Auditorium
2755 West 15th Street, Chicago, Illinois
Director: Hyman J. Zimmerman, M.D., F.A.C.P.

Fees: A.C.P. Members, $60; Nonmembers, $100; Minimal Registration, 75; Maximal Registration, 200.

Note: Registration forms and requests for information are to be directed to: Edward C. Rosenow, Jr., M.D., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pa., 19104.

Summary of Course: The relatively unique opportunity of a five-day course devoted to hepatology permits an attempt at a balanced consideration of this segment of medicine. This will start with morphologic, physiologic and biochemical aspects, and diagnostic measures; and will continue with symposia and panels on chronic degenerative disease, acute necro-inflammatory disease and neoplastic diseases of the liver. Separate considerations will be given to involvement of the liver in extrahepatic disease and to the broad problem of jaundice.

Hotel Accommodations: The La Salle Hotel, La Salle Street at Madison, Chicago, Ill., Mr. Don K. Miller, General Sales Manager. Single rooms, $8.00, $9.00, $10.50, $11.00, $12.00, $13.00, $15.00, $16.00, $18.00; Twin-bedded rooms, $16.00, $18.00, $20.00, $21.00, $22.00, $23.00, $25.00.

When writing for reservations, please identify yourself with the College, and with this particular course.

GASTROENTEROLOGICAL CONVENTION

October 25, 26, 27, 1965

The 30th Annual Convention of the American College of Gastroenterology will be held at the Americana in Bal Harbour, Fla., on October 25, 26, 27, 1965.

In addition to the individual papers to be presented, there will be a Panel Discussion on Diseases of the Pancreas and a Photoquiz on Gastroscopy in which several "experts" and the audience will participate. A Wednesday evening session, devoted entirely to a Radiology Quiz, will be conducted by Dr. Manuel Viamonte, Jr. of Miami, Fla. and other "experts" as participants.

The Convention will hear about foreign developments in gastroenterology and allied fields from Dr. John Tomenius of Sweden; Dr. Vinko Percic of Yugoslavia and Dr. Zdenek Maratka of Czechoslovakia amongst others.

On October 28, 29, 30, immediately following the Convention, the Annual Course in Postgraduate Gastroenterology will be given. The moderators will be Dr. I. Snapper, Consultant to the Veterans Administration Hospital, Ft. Hamilton, Brooklyn, N. Y., and Dr. John L. Madden, Clinical Professor of Surgery, New York Medical College; Director of Surgery, St. Clare's Hospital, New York, N. Y. Sessions will be held at the Americana and at the Mt. Sinai Hospital. Attendance at the Course will be limited to those who have registered in advance.

Silver Certificates are to be presented to those who have been affiliated with the organization for 25 years.

The Convocation Ceremony to be held at the Americana on Sunday evening, 24 October 1965, will feature the presentation of certificates to newly elected Fellows and Associate Fellows.

Copies of the program and further information may be obtained by writing to: American College of Gastroenterology, 33 West 60th Street, New York, N. Y. 10023.

SYMPOSIUM ON CLINICAL ASPECTS OF HODGKIN'S DISEASE

November 22, 1965

Sutton Ballroom, New York Hilton Hotel, New York, N. Y.

Sponsors: American Cancer Society, Inc.—National Cancer Institute.

Morning Session—9:30 A.M.-12:30 P.M.; Aftrenoon Session—2:00 P.M.-5:00 P.M.; Question and Answer Period; Summary and Conclusions.

BASIC SCIENCES COURSE IN OPHTHALMOLOGY

December 6-10, 1965

A full time five-day Course in Review in Basic Sciences in Ophthalmology will be given December 6-10, 1965.

Tuition is $175.00.

For Registration, please write to: Mrs. Tamar Weber; Registrar, Institute of Ophthalmology of the Americas, New York Eye & Ear Infirmary, 218 Second Avenue, New York, N. Y. 10003.

IX INTERNATIONAL CANCER CONGRESS

October 23-29, 1966—Tokyo, Japan

In connection with the IX International Cancer Congress, which will take place in Tokyo, Japan, October 23-29, 1966, a charter flight and several group flights are contemplated, thus substantially reducing the cost of transportation. Members of the immediate family of congress participants will be eligible.

Anyone interested should communicate with Hirsch Marks, M.D., 435 East 57th Street, New York 22, N. Y.

HARTFORD HOSPITAL
SATURDAY MORNING 11 O'CLOCK GUEST SPEAKERS

September 25 to December 11, 1965

September 25

Richard Gorlin, M.D., Assistant Professor of Medicine, Harvard Investigator, Howard Hughes Institute
Subject: "Coronary Physiology"

September 30-October 2 (3-Day Visiting Surgeon)

George D. Zuidema, M.D., Surgeon-in-Chief, Johns Hopkins Hospital
Oct. 2—H. H. Amphitheater
9:00 A.M. Surgical Conference
11:00 A.M. "The Surgeon As A Teacher"
Oct. 2—10:00 A.M. Grand Rounds

October 9

Symposium On Anxiety And Depression—11:00 A.M. to 1:00 P.M. H. H. Amphitheater
Milton Rosenbaum, M.D., Professor of Psychiatry, Albert Einstein Medical College
Morton Bogdonoff, M.D., Professor of Medicine, Duke University
Herman Denber, M.D., Director, Manhattan State Hospital, New York

October 16

Theodore Woodward, M.D., Professor of Medicine, University of Maryland
Subject: "The Salmonella Infections"
Oct. 18—5:00 P.M. "Clinical Presentation" H. H. Amphitheater
8:15 P.M. "World Communicable Diseases" Hunt Memorial

October 23

Samuel L. Katz, M.D., Assistant Professor of Pediatrics, Harvard
Subject: "Mechanisms of Recovery and Resistance in Viral Infection"

October 30

Robert H. Barter, M.D., Professor of Obstetrics-Gynecology, George Washington Medical School
Subject: 10:00 A.M. "Prevention of Prematurity in Multiple Pregnancy"
11:00 A.M. "Some Emotional Factors in Gyn Practice"

November 6

David Weisberger, M.D., Dean, Harvard Dental School
Subject: "Oral Viral Infections"

November 13

Lester Adelson, M.D., Coroner, Cuyahoga County, Cleveland, Ohio; Associate Professor of Forensic Pathology, Western Reserve.
Subject: "The Unwitnessed Homicide"

November 20

Irving S. Cooper, M.D., Professor of Neurosurgery, New York University; Director, Department of Neurosurgery, St. Barnabas Hospital.
Subject: "Cryosurgery"

November 27

Leon Rosenberg, M.D., Associate Professor of Medicine, Yale
Subject: "The Biochemistry of Genetics"

December 4

Marvin Mitchell, M.D., Assistant Professor of Medicine, Tufts
Subject: "The Thyroid—Function and Physiology"

181ST SEMI-ANNUAL COUNTY ASSOCIATION MEETINGS

September 22 — Hartford County
September 29 — Fairfield County
October 7 — New London County
October 12 — Litchfield County
October 14 — Middlesex County
October 19 — Tolland County
October 21 — Windham County
October 28 — New Haven County

BOOKS RECEIVED

Books received for review are acknowledged in this department and such acknowledgement must be regarded as a sufficient return for the courtesy of the sender. Selection will be made for review in the interests of our readers and as space permits.

The Diagnosis And Treatment of Endocrine Disorders In Childhood and Adolescence. Third Edition. By Lawson Wilkins, M.D., The Charles C. Thomas Co., Springfield, Illinois, 1965, 619 pp., Illustrated. $26.50.

Obstetrics. Thirteenth Edition. From the Original Text of Joseph B. DeLee, M.D. Author: J. P. Greenhill, M.D. W. B. Saunders Co., Philadelphia and London, July 6, 1965, 1246 pp., with 1296 illustrations on 1193 figures, 54 in color. $20.00.

Applied Hypnosis And Positive Suggestion. In Medicine, Dentistry and Patient Care. George A. Ulett, M.D. and Donald B. Peterson, M.D., Editors. The C. V. Mosby Co., St. Louis, Missouri, 1965. 134 pp. $8.50.

The Management Of Fractures And Soft Tissue Injuries. By The Committee on Trauma, American College of Surgeons. Second Edition. W. B. Saunders Company, Philadelphia and London, 1965. 365 pp., Illustrated. $7.50.

Surgery In World War II, Thoracic Surgery, Volume II. Prepared and published under the direction of Lt. Gen. Leonard D. Heaton, Surgeon General, U.S. Army. Editor in Chief: Col. Arnold Lorentz Ahnfeldt, MC, USA; Editor for Thoracic Surgery: Frank B. Berry, M.D.; Associate Editor: Elizabeth M. McFetridge, M.A. Office of the Surgeon General, Department of the Army, Washington, D. C., 1965. 615 pp., Illustrated. Price not specified.

Electrocardiography And Vectorcardiography. Instrumentation, Fundamentals, and Clinical Applications. Author: Lawrence E. Lamb, M.D. The W. B. Saunders Co., Philadelphia and London, 1965. 609 pp., Illustrated. $17.00.

Surgery In America: From the Colonial Era to the Twentieth Century. Selective Writings. Edited by A. Scott Earle, M.D., W. B. Saunders Co., Philadelphia and London, 1965. 280 pp., Price not specified.

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NEW BOOKS IN REVIEW

CARDIOMYOPATHIES. Edited by G. E. W. Wolstenholme and Maeve O'Connor, Ciba Foundation Symposium. Little, Brown and Co., Boston, Mass., 1964. 428 pp., 136 illustrations. $12.50.

Reviewed by: LOUIS H. NAHUM

The table of contents reveals an ambitious attempt to cover a wide spectrum of heart disease, some congenital like hypertrophic obstruction of the left ventricular outflow tract, its clinical picture and pathology and how to make a diagnosis, the surgery suggested and drugs used in its management.

An important paper on drug induced myopathies by Eleanor Zaimes is of importance to the clinician because she emphasizes what has been known but requires repeated emphasis that reserpine, quanethidine and methyldopa but especially the first depletes the myocardium of norepinephrine and removes from it an important cardiotonic reserve which the heart may need to avoid heart failure. In fact it may precipitate acute insufficiency if the heart is subjected to exercise, hypoxia or anesthesia.

There is a very short chapter on other forms of cardiomyopathies by Brigden and here he refers to alcoholic cardiomyopathy as one that the clinician should be aware of.

Puerperal heart failure appears in a discussion probably because it is so rare and because there is some doubt as to whether it may not be due to underlying myopathy.

The last session deals with infective and viral conditions of the myocardium. The physician can learn that viral myocarditis is not responsive to corticosteroids in the acute phase. However, corticosteroids are useful in myocarditis associated with eosinophilia.

The discussions after each subject by cardiologists, pediatricians, neurologists and biochemists, physiologists and pathologists, is brilliant and extremely rewarding. The book makes excellent reading and is filled with science both experimental, and clinical and with wisdom as well.

IDIOPATHIC HYPERTROPHIC SUBAORTIC STENOSIS, Staff of the Cardiology Branch and Clinic of Surgery, National Heart Institute, American Heart Association, New York, 1964. 213 pp., $2.50.

Reviewed by: HERBERT LEVINE

Idiopathic hypertrophic subaortic stenosis is one of a group of recently described syndromes that make possible a definitive diagnosis in a number of the interesting group of patients with heart disease of obscure etiology. The pathological findings were first described in Germany in 1907, but the delineation of the disease as a clinical, pathological, and, probably, genetic entity did not begin until the 1950's. Braunwald, Morrow, and their colleagues at the National Heart Institute have been able to study in detail 64 cases, and in this monograph they present three long papers dealing with the clinical and laboratory findings, the operative treatment and results, and intra-operative studies of the mechanism of obstruction.

This disorder is characterized by marked left ventricular hypertrophy of unknown etiology, involving the interventricular septum and the left ventricular outflow tract. During left ventricular contraction this hypertrophied muscle causes obstruction to left ventricular ejection. The disease is more common in males and is generally diagnosed in young adult life. Systolic murmurs are present, and symptoms of dyspnea, angina, dizziness, paroxysmal nocturnal dyspnea, and syncope are encountered in that order of frequency. The results of electrocardiographic, roentgenographic, and hemodynamic studies are presented in great detail and show a large range of variation. Manifestations of the condition may or may not be present at birth or in early childhood. In 23 of the patients, members of 11 separate family groups, a familial incidence consistent with inheritance as an autosomal dominant was observed. The natural history of the disease is variable, and sudden death is not uncommon, presumably due to arrythmias.

The operative treatment consists of left ventricular myotomy, sometimes combined with resection of a portion of the hypertrophied septum. Of the 10 patients operated upon, 9 had satisfactory relief of obstruction, and the 10th died suddenly on the 7th post-operative day. The technique of operation, criteria for selection, and many physiologic studies before, during and after surgery are presented in great detail. This includes long-term follow-up and reevaluation of 7 of the 9 survivors.

This disorder should be familiar to every physician who sees patients with cardiac disease, and this monograph provides a detailed and lucid exposition of all features of the condition.

HALLUX VALGUS, ALLIED DEFORMITIES OF THE FOREFOOT AND METATARSALGIA, By H. Kelikian, M.D., W B. Saunders Co., Philadelphia, Pa., 503 pp., illustrated, June 2, 1965, $19.50.

Reviewed by: DENIS S. O'CONNOR

In the interests of accuracy the title of this work should be "The Surgical Treatment of Hallux Valgus Allied Deformities of the Forefoot and Metatarsalgia."

There is scarcely a page that does not have pictures of deformed feet or the corrected feet or reproductions of the roentgenograms. The photograms are accompanied by line drawings of the bones of the forefoot to further illustrate the deformity or the correction. While this clarification of the deformity or the correction is commendable the sharply narrowed and rather unphysiological field which the author confines himself to would seem to limit the appeal of his endeavor to the surgeon whose sole interest is the relief of symptoms of foot disorders wholly by surgical means.

The traditional approach to consideration of foot problems would seem to recognize the foot as a whole if not the effects on the foot by factors outside the foot. Had this been done the reviewer feels sure that even though the treatment was confined to the surgery of the anterior parts of the foot it would merit a wide patronage.

The author not only gives scant consideration to the many contributors to literature on the foot but actually seems to scorn their views. While he seems to admit that the severe deformities seen in feet are usually in the elderly whose feet have borne the burden of the years he seems to ascribe all the deformities to the genetics of the individual.

Non-surgical treatments for foot deformities merit no consideration in this book and one wonders how basic faults of posture are handled as they must be postoperatively.

The extensive bibliography at the end of each chapter indicates a wide acquaintance with the literature by the author and makes one wonder at his acceptance of such a narrow approach and a rejection of the opinions of so many highly regarded authorities.

While this book because of its illustrations will have a place in the reference library its use should be confined to the surgeon who has occasion to operate on badly deformed feet. It would be unfortunate to recommend this book to the unformed physiology of the young orthopaedist. The conservative treatment of foot conditions has much to offer and the radical surgical treatment by irrevocable operations should be reserved for those which cannot otherwise be handled.

As indicated above this book cannot be recommended to medical students or young surgeons as yet without a sound philosophy in the treatment of foot conditions but can be recommended to mature surgeons interested in the relief of badly deformed feet and to the medical library where its excellent illustrations can be appreciated.

SURGERY OF THE BILIARY PASSAGES AND THE PANCREAS, by Walter Hess, M.D., Translated from the German by Heinrich Lamm, M.D., The D. Van Nostrand Company, Inc., Princeton, New Jersey, 1965. 617 pp., Illustrated. $25.00.

Reviewed by: JAMES R. CULLEN

The author of this book, Doctor Walter Hess, bases a comprehensive study of biliopancreatic surgery on statistical evidence from 1,654 biliary patients seen and treated by him over a period of twenty years. The text is profusely illustrated throughout with documentation of bile duct procedures explained to the minutest detail.

The early chapters of the book are devoted to the anatomy and physiology of the bile ducts and the pancreas with emphasis on the surgical aspects of the anatomy. Pathological changes correlated with clinical findings are present throughout the early half of the book. Illustrations of X-ray diagnostic findings are present everywhere. Differential diagnosis of biliary tract diseases by means of cholangiography, pancreatography, choledochoscopy, and portal vein manometry.

The second half of the book deals with operative techniques demonstrating in every way possible the author's procedures for cholecystectomy, common bile duct exploration, papilla surgery, bilio-gastrointestinal anastomoses, radical pancreatic surgery, and operations on the autonomic nervous system involving the pancreatic and bile duct passages.

The author's opinions as to what to do and when to do it are based on actual experience. Practically all the techniques are related to actual cases which the author has treated and of which he very aptly describes both the treatment and the outcome.

The excellent presentation of subject matter indicates clearly the broad experience of the author, both in the research field and in actual surgical performance during his time as Professor of Surgery at the University of Alexandria, Egypt, and as a practicing surgeon in Zurich and a Privatdozent for Surgery at the University of Basle. One of the important contributions of Doctor Hess is the perfection of radiomanometry which he brought into surgical use in Germany and Switzerland. This technique of radiomanometry was developed by Caroli but the author has greatly improved this very interesting diagnostic procedure.

At a time when the literature on biliary and pancreatic surgery is so voluminous, this book is a worthwhile addition to any practicing surgeon's armamentarium. The book has lost nothing in its translation from German to English by Doctor Lamm and, together with other reviewers, I believe that this text will become a surgeon's bible on the diseases of the biliary tract and the pancreas.

In Memoriam

Goldstein, Morris B.—New Haven; Yale School of Medicine, 1924. Dr. Goldstein was a prominent pediatrician in the New Haven area for 38 years. Dr. Goldstein enlisted in the North Dakota National Guard in 1915 and served on the Mexican border from 1916 to 1917. He fought with the Army in France in World War I in 1917; was gassed the following year in an attack on the Vesle River; and returned in 1919 to the United States. Dr. Goldstein was on the attending staffs of Grace-New Haven Hospital and the Hospital of St. Raphael; was a former president of the New Haven Pediatric Club and held membership in the Amercian Medical Association, the Connecticut State Medical Society, the New Haven County Medical Association, the New Haven City Medical Association, and the Hezekiah Beardsley Pediatric Club. Dr. Goldstein died August 12, at the age of 69.

Storrs, Ralph W. — West Hartford; Harvard Medical School, 1920. Dr. Storrs practiced medicine in the Hartford area for over 30 years. He was former director of obstetrics and gynecology at Hartford Hospital. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Storrs died July 25, at the age of 71.

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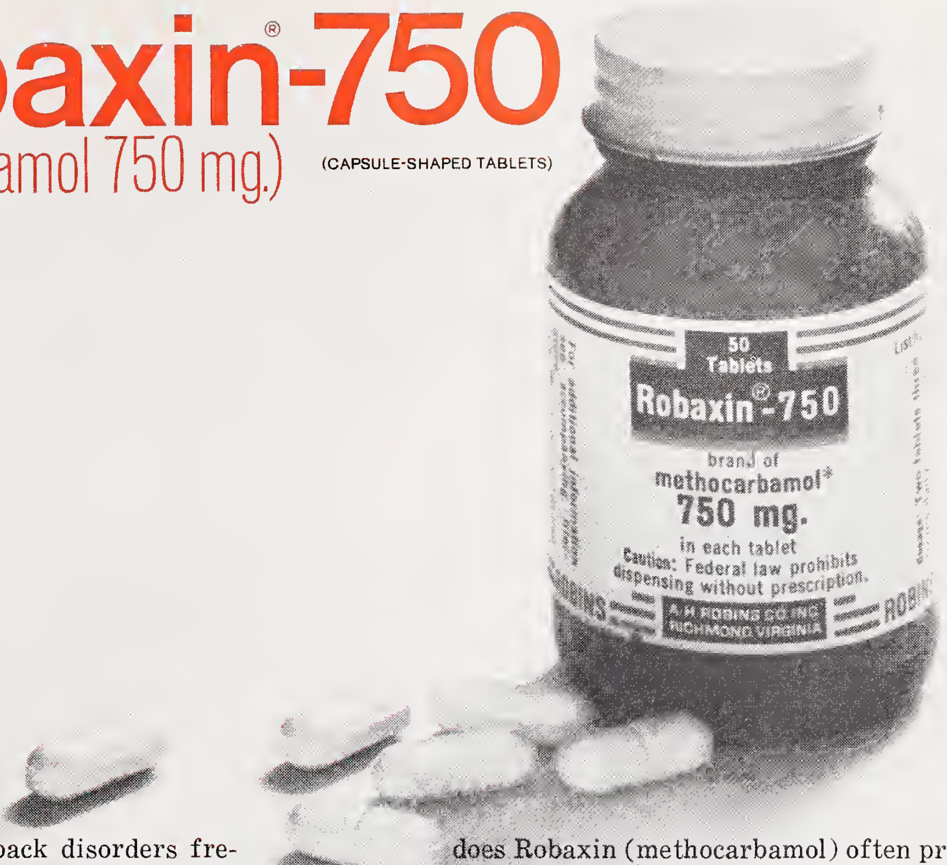

It has been noted that low-back disorders frequently "...are caused by truly mechanical conditions which yield to conservative treatment."[1] Basic to this conservative treatment are bed rest, a board for the bed, and applied heat. In addition, a good muscle relaxant is often helpful, as "...muscle relaxants are useful in chronic as well as acute low backaches."[4]

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REFERENCES: 1. Soto-Hall, R.: Med. Sci. *14*:23, 1963. 2. McCarrol, H.R.: Paper read at the Annual Meeting of the American Medical Association, Atlantic City, June 16-20, 1963. See Medical News: J.A.M.A. *185*:39 (July 13), 1963. 3. Gordon, E.J.: Med. World News *5*:54, 1964. 4. Cozen, L.: GP *26*:82, 1962. 5. Larson, C.B.: Postgrad. Med. *26*:142, 1959. 6. Forsyth, H.F.: J.A.M.A. *167*:163, 1958. 7. Weiss, M., and Weiss, S.: J. Amer. Osteopath. Ass. *62*:142, 1962. 8. Rowe, M.L.: J. Occup. Med. *2*:219, 1960.

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MEDICAL NEWS

Medical Ethics To Be Discussed

Former Congressman Walter H. Judd, M.D., will be a luncheon speaker at the first National Congress on Medical Ethics and Professionalism, sponsored by the American Medical Association Saturday and Sunday, Oct. 2 and 3, at the Drake Hotel in Chicago.

Dr. Judd's topic, *"Can the Best be Better?"*, will outline accomplishments and deficiencies in the medical profession's standards for ethical deportment.

The opening session of the National Congress will feature James Z. Appel, M.D., president of the AMA, who will speak on *"Medicine—A Profession or a Business?"*; Everett Hughes, Ph.D., sociologist, formerly of the University of Chicago who studied professionalism as it related to medicine during a period spent at the University of Kansas Medical Center; Russel B. Roth, M.D., of the AMA's Council on Medical Service, who will discuss *"The Transmutation of Economics to Medical Ethics,"* and James H. Berge, M.D., chairman of the AMA Judicial Council, who will outline the scope of the conference and the AMA's expanded program on medical ethics.

Also speaking on the Oct. 2 program will be three physicians who serve as the investigating committee for the Judicial Council in "original jurisdiction" cases coming before the AMA. They are Drs. Arnold O. Swenson, Duluth, Minn.; Robert Mayo Tenery, Waxahachie, Texas, and William Y. Rial, Swarthmore, Pa.

Saturday afternoon will be devoted to workshop sessions. Handling of patient grievances and medical disciplinary procedures will be discussed.

On the Sunday program, speakers will include Wendell C. Stover, M.D., Boonville, Ind., chairman of the AMA Commission to Coordinate the Relationships of Medicine with Allied Health Professions and Services; Samuel P. Newman, M.D., Denver, Colo., chairman of the AMA Committee on Osteopathy and Medicine; Attorney Edward L. Wright, who is chairman of the American Bar Association's committee preparing a revision of the legal profession's canon of ethics, and William H. Gordon, M.D., Lubbock, Texas, whose topic is *"Be a Physician First."*

Physicians interested in attending the National Congress on Medical Ethics and Professionalism should write to Dr. James H. Berge, Chairman, Judicial Council, AMA, 535 N. Dearborn Street, Chicago, Illinois, 60610. Early reservations are advised.

Juvenile Osteochondrosis Cause Unknown

A mysterious childhood crippler which leaves many of its victims with a limp and some with a shortened leg is described in the current Journal of the American Medical Association.

The cause of juvenile osteochondrosis of the hip remains unknown.

The disease involves the femur, or upper leg bone, and its joint with the thigh. The end of the femur becomes flattened and irregular; it may even fragment.

This continues for a year or more, followed by a "plateau" phase lasting about six months. Then, as mysteriously as they appeared, the symptoms begin to fade.

Pseudocoxalgia, or Legg-Calve-Perthes' disease, was first described early in this century. The current JAMA article is by Lawrence H. Wilk, M.D., of the Orthopedic Service of the U.S. Army Hospital, Fort Hood, Texas.

Dr. Wilk studied the records of 186 children with 204 diseased hips treated over a 15-year period at the University of Michigan Medical Center. He formerly was on the staff of the Medical Center.

Among the group studied, some hips "regenerated" to normal, but many children were left with a limp, he said.

The best cure seems to be complete bed rest, but Dr. Wilk recognized the difficulty of keeping an active child in bed for three or four years.

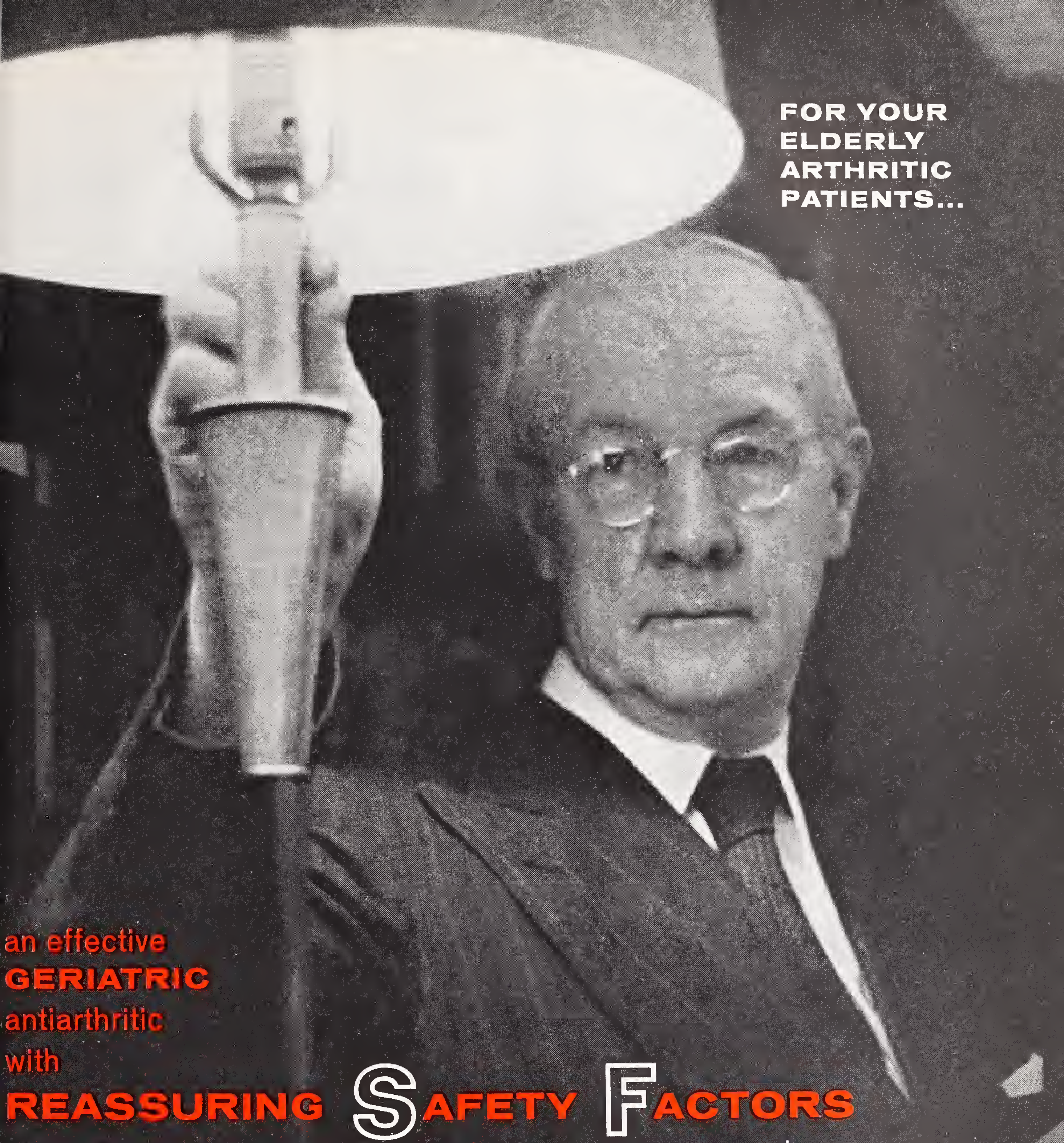
In many cases, the best compromise treatment seems to be a metal leg brace which takes the weight off the hip, but allows the child to walk, he said.

Onset of the disease in the group studied occurred at anywhere between 20 months and 16 years. The mean age of onset was 6.8 years. A definite increase in incidence was noted from 1 to 6 years.

The younger the child, the better the results of his treatment and the better his chances of complete recovery, the report said.

In most cases, initial symptoms could be traced to a specific day or week. The young patients, however, presented a baffling array of evidence (or lack of it) concerning the cause of their disease.

Falls or other trauma were not a significant factor, Dr. Wilk said. Obesity was present in only 31 patients. Childhood diseases, immunizations, and family histories of disease occurred in so few cases that they could not be considered as causes of osteochondrosis.



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Roentgenographic studies revealed a high incidence of spina bifida occulta (a defect of closure in the bony wall of the spinal canal).

"Whether this is related to juvenile osteochondrosis of the hip canot be determined at this time," Dr. Wilk said.

When the disease has run its course, "a variable amount of deformity of the femoral head, shortening of extremity, limp, pain and eventual degenerative changes may result," the report said.

Bladder Cancer And Tobacco

Longtime, heavy smokers may be more likely to have cancer of the bladder than nonsmokers or light smokers, suggests a report in the current Journal of the American Medical Association.

The report by two physicians at the Seattle Veterans Administration Hospital does *not* say smoking causes cancer of the bladder. Proof of cause is lacking, the report said, but statistical findings linking bladder cancer and tobacco use are "highly suggestive."

One hundred thirty-six patients with bladder cancer were studied and of these, 123 were found to be either medium or heavy smokers. Six were nonsmokers. The remainder (7) smoked occasionally.

Ninety-four per cent of bladder cancer patients were found to have smoked 10 or more cigarettes a day for 30 years or more. The great majority of patients smoked only cigarettes, three smoked only cigars, one chewed tobacco, five smoked only a pipe, and 12 were mixed smokers.

While acknowledging that a "control group" for such a statistical study is impossible, the report noted that tobacco usage among bladder cancer patients was significantly higher than among two other groups of 121 and 222 patients studied.

There were no bladder tumors found among light or nonsmokers 20 to 49 years of age. In this same age group, there were four patients with bladder cancer classified as "medium smokers" and 12 patients who were heavy smokers.

"The underlying factors in the constitution of the persons who smoke heavily, such as genetic differences or personality characteristics, may possibly be more important than smoking, per se," said the authors, Ben G. Cobb, M.D., and Julian S. Ansell, M.D. "Nonetheless, the correlation with tobacco usage appears soundly established in the groups studied."

The investigators said they were unable to establish a good correlation between the amount of tobacco used and the onset of cancer.

"The threshold appears to lie between 15 and 30 'pack-a-day' years or its equivalent," the report said.

Bladder cancer is on the rise in this country and in western Europe, the report noted. It suggested that the cause may be an unidentified agent "which is widely distributed and increasing in popularity."

"We do not propose that heavy tobacco usage is the sole cause of bladder carcinoma," the authors said. "These tumors occasionally do occur in nonsmokers, just as lung cancer occasionally occurs in nonsmokers."

A possible mechanism for producing the cancer was suggested. Two substances resulting from the metabolic breakdown of the amino acid, tryptophane, have some potential for inducing bladder cancer. Both have been found in increased amounts in the urine of some bladder cancer patients.

It is generally accepted, the authors said, that the cancer-causing agent is detoxified in the liver. Not until the substance reaches the urine, however, do the chemical reactions take place which produce the cancer. This would explain why the cancer occurs in the bladder, rather than the ureter or kidney pelvis, the report said.

Urine obstructions also play a role in the development of bladder cancer. Persons with such obstructions were found to have a greater susceptibility to cancer of the bladder.

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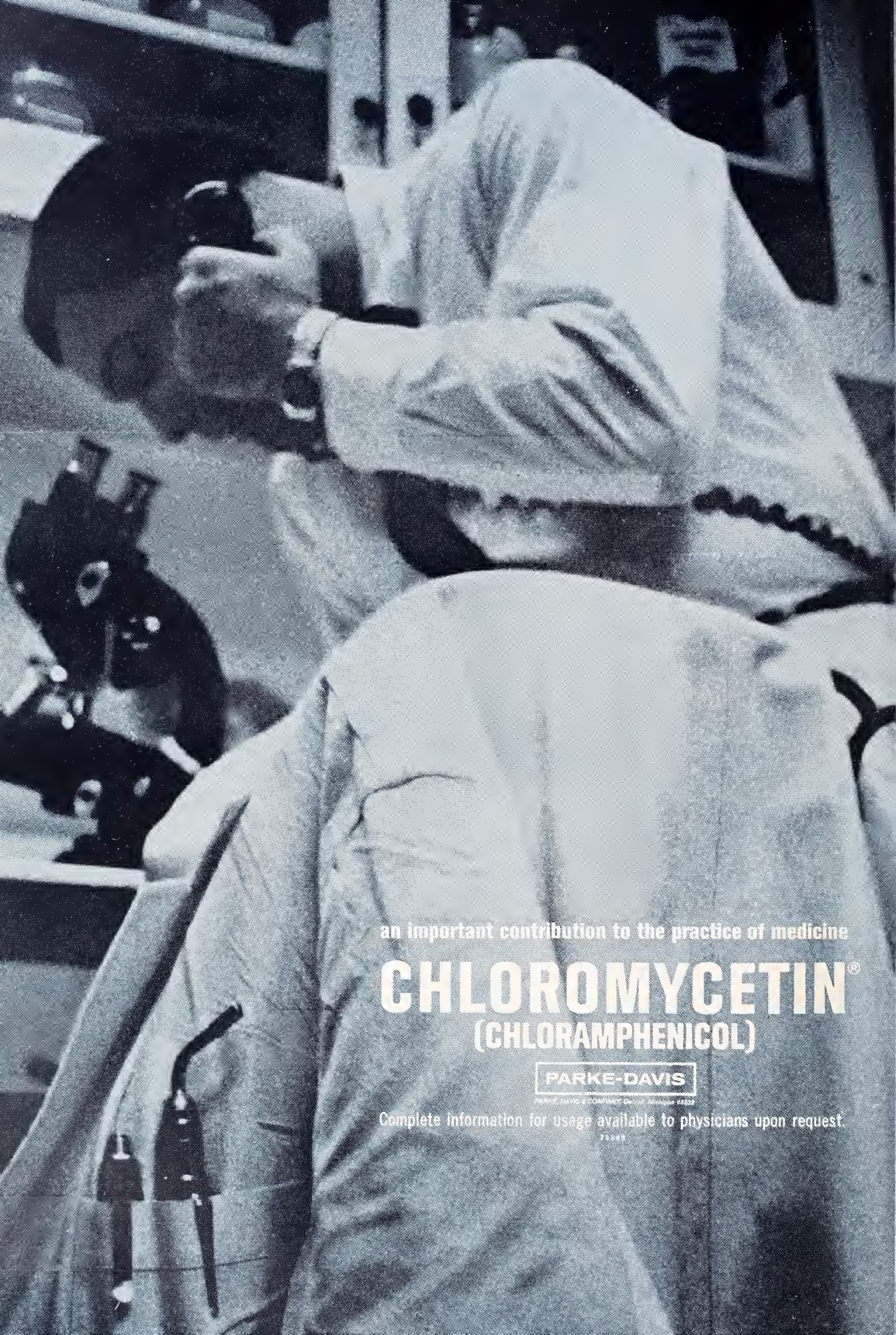

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Connecticut Medicine

editorials

Linolenic Acid

The problem of preventing clinical coronary heart disease divides itself into two main components; prevention of atheroma and its progression and protection against its complications, mainly thrombosis is the ultimate cause of arterial occlusion in at least half of the fatal cases of myocardial infarction. The remaining cases result from occlusive atherosclerosis without recent thrombosis. However, thrombosis may also have played a role in the maturation and progression of the atheromatous lesion in these cases as well. Intermittent or continuous deposition of blood platelets and fibrin takes place on the atheromatous intima and these deposits may be organized with resultant intimal thickening and narrowing. It is clear then that thrombosis must be recognized as an important factor that largely determines the occlusive properties of atheroma and thereby to a certain extent its morbidity and mortality.

After intimal damage either due to atherosclerosis, or experimental trauma, platelets start within seconds to adhere to the damaged endothelium or exposed collagen.[1] At the beginning the clumps are easily disrupted by the blood stream, but new aggregates steadily form to produce a white thrombus. This platelet part of the thrombus is independent of blood coagulation and cannot be prevented by heparin or anti-coagulants. This seriously limits the treatment efficacy of anti-coagulants because platelet thrombi alone may occlude a stenotic coronary artery. It is obvious that what we really need is a means of retarding the formation of white platelet thrombi and this would require some process that impairs platelet aggregation.

There is strong evidence that changes in the composition of the blood itself may predispose to thrombotic complications in various clinical conditions such as post-operative and post-partum periods, certain infections, after intravascular hemolysis, hemorrhage, fractures and of course arteriosclerotic disease, diabetes, and hypercholesterolemia. By means of a glass-bead method, Owren[2] actually did find a factor which he called anti-Willebrand factor which increased the tendency of platelets to adhere and aggregate in all these conditions. He reasoned that if the tendency to thrombosis correlates closely with the adhesion aggregation tendency, then a logical consequence would be to search for ways of reducing this high adhesion-aggregation tendency of platelets in the various diseases mentioned above.

Experimental procedures in his laboratory carried out by Nordøy[3] in the jugular vein of the rat, permitted him to study effects of various substances on thrombosis. Strikingly enough one-third of animals did not develop thrombosis after trauma while two-thirds did. The one-third showed a low level of the anti-Willebrand factor that produces platelet aggregation. He then tried a wide variety of substances which he fed to the animals, such as saturated fats, cholesterol, corn oil and linseed oil to determine whether they could influence the thrombotic process. Of all substances studied only linseed oil reduced the thrombotic factor. On linseed oil only one-third of the animals developed thrombosis as compared to two thirds of animals

THE COVER

BERNARD: PHYSIOLOGIC EXPLORER

THE ONLY PLACE where Claude Bernard (1813-1878) felt at home, outside experimental laboratories, was at the provincial farm near Saint-Julien (Rhône), France, where he was born. Bernard's great skill at dissection and at observation gave medical science benefit of outstanding physiologic discoveries concerning pancreatic secretions, animal sugar, poisons, and vasomotor nerves. He held professorships in physiology at leading Paris schools; he was awarded national and international scientific honors; but his great book, *An Introduction to the Study of Experimental Medicine,* was written at his old farm home to which he returned to recuperate from recurrent attacks of illness.

not fed linseed oil. The active principle in linseed oil that produced this reduction in thrombosis was linolenic acid.

The road was now open for studying effect of linolenic acid upon the thrombotic factor in those patients having a tendency to thrombosis.[4] When he administered linolenic acid alone to such patients there resulted a marked reduction in platelet adhesiveness as measured by the glass bead system. The results of observations for over a year on numbers of patients with disease prone to thrombosis have shown that the thrombotic factor has been kept to normal levels and can be so maintained indefinitely by a daily dose of about 15 ml. of linseed oil whose content of linolenic acid is around 50 per cent. The specific lowering effect of linolenic acid upon the hyperactivity of the thrombotic tendency certainly warrants the testing of the prophylactic and therapeutic effect of linolenic acid in atherosclerosis, diabetes and other clinical conditions that are associated with an increased tendency to thrombosis. Owren and his group now have such studies under way.[1]

The very marked effect of moderate dietary supplement of linolenic acid upon platelet adhesiveness might mean that many patients with thrombotic diseases suffer from a dietary deficiency of linolenic acid. If this were true then the clinical picture of atherosclerosis which varies from a benign non-thrombosing type in certain population groups to a severe thromboatherosclerosis in prosperous centers might be related to a varying dietary intake of linolenic acid. By calculating the relative content of linolenic in the fat consumed in Norway during the war, the content was 1.65 per cent and the mortality from thrombotic disease dropped sharply.[5] After the war the linolenic acid content of the fat consumed fell to 0.8 per cent and the mortality figures rose again. In a rural district with a low mortality from thrombotic disease the linolenic acid content of the fat consumed was 1.1 per cent. In Oslo with a high mortality from thrombotic disease the diet contained 0.8 per cent of linolenic acid in the fat consumed. The platelet adhesiveness was low in the rural sections but high in Oslo.

There is thus an association between the higher content of linolenic acid in the fat consumed, a lower activity of platelet adhesiveness and a lower mortality from cardiovascular disease in rural as compared to the Oslo population. To be sure the findings suggest a causal relationship but by no means furnished any proof of a cause and effect relationship. Nevertheless Owren's findings suggest that coronary heart disease and other manifestations of clinical thromboatherosclerotic diseases are associated with an increased tendency to thrombus formation because of an increased activity of a factor that promotes platelet adhesiveness. This activity can be reduced to normal by increasing the linolenic acid content of the fat consumed.

It is widely accepted today that one of the reasons for the rising mortality of ischemic heart disease in the western countries is related to over nutrition and over consumption of saturated fat. A prophlyactic diet is therefore recommended, moderate in calories and fat, with a substitution of polyunsaturated for saturated fats. The primary aim of such a diet was to lower plasma cholesterol levels in the hope that this will slow down the progression of atheromatosis. Owren's studies show, however, that among all unsaturated fatty acid only linolenic acid plays a role in reducing platelet adhesiveness and could be the determining factor in preventing the occurrence of intravascular clotting.

The results presented above do not yet allow any definite conclusions concerning the clinical effect of increasing the linolenic acid content of the fat in the diet. It may be premature at present to recommend such dietary changes. However, linolenic acid is a good vegetable fat, can do no harm and seems worthy of trial on an experimental basis. It may be worth recalling that six per cent of the fat in whole wheat and whole rye flour is linolenic acid, that it occurs in soybean oil in exceedingly small amounts, that it is not present in corn or safflower oil and that only linseed oil contains the greatest proportion, up to 50 per cent.

L.H.N.

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Diabetogenic Effect Of Pregnancy

The great majority of women survive pregnancy without developing diabetes. If a normal woman in pregnancy is given an intravenous glucose tolerance test no significant changes occur. It would appear that normal islands of Langerhans can and do meet the demands of pregnancy. But pregnancy still

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appears to be a potent stress on pancreatic islet cell reserve and a negative glucose tolerance test early does not preclude an abnormal curve later. In fact with the progression of pregnancy there develops in a certain proportion of women growing impairment of glucose tolerance. Oral tolerance tests which Kyle[1] believes the most valuable test available for the diagnosis of diabetes in pregnancy or in the non-pregnant state, show in range from 10-81 per cent abnormal in the third trimester of pregnancy. However, in selected women with a diabetic family history, previous glycosuria during pregnancy, a history of large babies, unexplained intra uterine deaths, repeated bouts of preeclampsia and high prenatal mortality the incidence of abnormal glucose tolerance tests is high.

The interesting thing is that when glucose tolerance tests are decreased during pregnancy, the impairment tends to recur with increasing severity in subsequent pregnancies. Although most women with abnormal glucose tolerance tests during pregnancy became normal later, some remain permanently diabetic or become so in subsequent years up to five and one-half years.[2] In fact, follow up studies have disclosed a large number of overt diabetics even in the group in which the oral curve, of carbohydrate tolerance produces a "lag" curve that is elevations after a two to three hour period. It would, therefore, seem desirable to consider even a borderline abnormal glucose tolerance test in a "stress" situation of pregnancy as heralding the possibility of eventual diabetes. Furthermore, when pregnant women are selected as diabetic suspects on the basis of borderline abnormalities of the standard glucose tolerance curves, a strongly positive family history or glycosuria during a previous pregnancy, then the steroid augmented glucose tolerance test is frequently abnormal. It would seem inescapable that pregnancy is a diabetogenic event.

Numerous clinical observations made during pregnancy in established diabetes support the concept that pregnancy is diabetogenic. It causes increasing hyperglycemia and added insulin requirements. After delivery there is a sudden and marked decrease in insulin requirements. In middle age, diabetes is more common in women than in men especially in married women and this incidence increases with parity. Women that have had five children have three times as great a likelihood of having diabetes as women without children and over 50 per cent of women who have had ten children are diabetic.[4] Thus pregnancy leads to progressive impairment of carbohydrate tolerance.

During the latter part of pregnancy there is evidence of increased insulin production. The plasma reveals increased insulin like activity.[3] The beta cells of the pancreas show hyperplasia with increased granulation. The granules are thought to be the precursors of insulin and parallel the insulin content of the pancreas. When the islets can no longer supply the relative or absolute increase in insulin requirements during the latter part of pregnancy, then of course, diabetes can become apparent. In short such "stresses" as remain benign to a subdiabetic patient normally will produce diabetes during pregnancy. Apparently the need for increased amounts of insulin are due to relative insulin resistance and not to increased requirements what then can this insulin resistance be attributed to?

Kyle considers three important extra pancreatic factors possibly contributory to the diabetogenic effect of pregnancy; growth hormone (GH) adrenocortical steroids, and other insulin antagonists. G.H. is diabetogenic in animals and in man, it intensifies diabetes. It produces degranulation and degeneration of the beta cells, it raises the blood sugar and therefore, increases insulin requirements. At first G.H. causes the pancreatic islets to secrete many times the normal amount of insulin in order to keep the blood sugar down, when the pancreas is unable to increase insulin output, then of course, diabetes becomes apparent. In pregnant rats there is three times the normal growth promoting activity under the influence of G.H. During pregnancy diabetes might develop or established diabetes become more severe because the demand on the islets exceeds their capacity and this leads to their exhaustion.[6]

There is a striking similarity between the experimental effects of G.H. and changes seen in pregnancy. There is increased insulin production in both. There are morphologic changes in islets that precede the development of diabetes and there is a decreased insulin response in both. Both G.H. and pregnancy produce a greater diabetogenic effect as the pancreas degenerates. It is clear that it is the functional reserve of the pancreas that is the limiting factor in response both to G.H. and pregnancy.

As with G.H. cortisol also produces hyperglycemia in many species including man and the effects are more pronounced when there is more impairment of insulin secretion. With cortisol, hyperglycemia is the result of increased gluconeogenesis and glucose output by the liver. This results in an increased insulin output and finally, islet exhaustion.[7] In pregnancy there is a dramatic increase in plasma cortisol levels most marked in the third trimester. In fact Hoet[8] produced diabetes in pregnant rabbits with doses of cortisol which are ineffective in non-pregnant rabbits. This led him to believe that pregnacy is the equivalent of steroid diabetes.

The placenta can produce adrenal steroid hormones, it can concentrate cortisol to twice the level found in systemic blood. Placental degradation of insulin has been proposed as another mechanism possibly contributing to the diabetogenic effects of pregnancy. Buse et al[9] by using I^{131} labelled insulin in the pregnant rat confirmed the ability of the placenta to bind and degrade insulin. The removal of insulin from the blood would certainly call forth a greater amount of insulin secretion.

Clearly, pregnancy is diabetogenic. During pregnancy there is a large production of G.H. and cortisol like substances and placental degradation of insulin, all of them capable of increasing the body demands for insulin and lead to exhaustion of the pancreatic islets. In patients whose islets are already damaged, diabetes can become manifest. It is certainly surprising that so many women survive pregnancy without clinical diabetes.

L.H.N.

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Prognostic Uncertainties In Cerebrovascular Disease

Ordinarily the brain carries about 12 per cent of the total cardiac output. This amount of blood considerably exceeds the usual metabolic requirements, so that cerebral metabolism may not even be impaired by an uncompensated and hemodynamically significant aortocranial lesion. Fazekas[1] has pointed out that the basic requirement of adequate cerebral blood flow is a functionally competent circle of Willis. This is made possible by competent collateral blood sources both intra and extracranial meaning of course the carotid and vertebral arteries. If there is a simple aortocranial lesion, then blood diverted from the other areas together with intracerebral vasodilation in a compromised area might be sufficient to maintain blood flow. This is facilitated when there is a slow development of occlusive vascular disease together with optimal cardiac output and arterial pressures. Under such circumstances a limited ischemic cerebral lesion can be compensated for to permit optimal potential for mental and physical rehabilitation.

These hemodynamic factors introduce many variables which can affect the course of patients suffering from occlusive cerebrovascular disease so that the outcome cannot be reliably predicted. This fact is particularly important now when angiography of cerebral vessels can reveal areas of stenosis or obstruction and when a firm decision is at times required as to advisability or inadvisability of surgical intervention. Especially is this true today when vascular lesions in the head and neck are surgically remediable. But there are in fact many persons who have severe cerebrovascular occlusive lesions without interference with their cerebral function until death from unrelated causes. For this reason the clinician cannot be certain whether a lesion demonstrated by arteriography is in fact the source of the symptoms. If a stenotic lesion is removed in a patient without symptoms or signs of involvement of cerebral function as some enthusiastic surgeons are doing then evaluation of such a result is impossible, except perhaps in terms of restoration of blood flow but not of function.

One would suppose that a precise definition of "significant" stenosis would help in a decision as to surgical intervention. But here again no uniformity of opinion can be found. Some investigators use 25 per cent arbitrarily, others believe anything less than 50 per cent is insignificant. This lack of uniformity of opinion of course, indicates that there exist other factors besides the degree of stenosis that are responsible for the genesis of the clinical phenomena, factors mentioned in the first paragraph. It is however, obvious why such factors increase the difficulty of interpreting the results of the technical aspects of vascular surgery.

Even when all available studies yield good results to suggest operation as the treatment of choice, the clinical outcome cannot be reliably predicted. Fazekas et al[2] in a study of twenty-five patients with occlusive cerebrovascular disease, twelve who underwent surgery and thirteen who served as controls, illustrate the difficulty in relating the

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clinical course of cerebrovascular disease to the therapeutic effort. All cases were maintained on anticoagulants so that this form of therapy could not be evaluated in terms of the effect on the clinical course. No follow up data of post-operative angiography and qualitative cerebral hemodynamic studies were available to compare the cases of surgical reconstruction and conservative management. Because of the great variability in outcome of cerebrovascular disease it was not possible to appraise the response to reconstructive surgery, anticoagulants or rehabilitation.

At present no method exists by which to predict accurately the future course of any patient, to help the clinician in deciding whether treatment with an anticoagulant or surgery is necessary. This undoubtedly leads to the treatment of some patients who would do well without any definitive therapy. With our present methods of diagnosis it is unlikely that they will be very helpful in predicting response of such patients to any method of treatment. What is needed and not presently available is a method to determine in some quantitative form the potential or existing contribution of the collateral blood supply. This would involve an entirely new method for studying speed of flow and volume of flow in the various cerebral areas. It is apparent that arteriography is necessary for accurate definition of the location and morphologic characteristics of the varied lesions that may be present in an individual patient. However, the clinician who will carefully review the patients history, perform a thorough physical examination, including auscultation of the neck and upper region of the thorax can establish the diagnosis in a high percentage of patients.

L.H.N.

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Biochemical Processes Involved In Memory Storage

Recently there has been a surge of interest both theoretical and experimental in the molecular basis of memory. We know about the molecular basis of transmission of genetic information. During the life of the individual there is some mechanism for storing and utilizing experiential information in the nervous system since the individual does possess memory of a previous experience. Is this due to the alteration of a particular molecule or set of molecules which may be regarded as a molecular engram or memory trace? Or must the structural basis of memory also consider the function of the entire neuron since there are well known reciprocal relationships between the cell body and the synapse and there are very complex functional interrelationships between neurons.

Dingman and Sporn[1] analyze in some detail the hypothesis that specific changes in neuronal RNA represents the molecular engram of memory. A large number of experiments have now been performed which support the view that RNA metabolism may be intimately connected with memory storage and learning. There are experiments which show that loss of memory in animals can be achieved by any agent that adversely affects RNA metabolism. There are also experiments which have been reported that memory can be improved in human subjects by long term administration of yeast RNA.[2] Similarly in animals long term treatment with yeast RNA increased the rate at which the animal acquired a behavioral response motivated by shock.[3]

Such experiments, however, merely stress the fact that RNA metabolism is an important parameter of neuronal function, but they do not prove that a given molecule or set of molecular structures is indeed the permanent memory trace. Dingman and Sporn believe that the following criteria must first be fulfilled. (a) The RNA must undergo a change of state in response to experience to be remembered; (b) the altered state must persist as long as the memory can be demonstrated; (c) specific destruction of the altered state must result in permanent loss of the memory. If these criteria are applied, then all evidence thus far published that RNA molecules are specific memory traces is at present highly circumstantial, for it does not rule out the possibility that changes in RNA might occur concomitantly with learning. There are thus two alternatives, either RNA molecules are important constituents of the nerovus system whose functional and structural state may change dramatically during the learning experience, but nevertheless do not function as permanent memory traces; or RNA molecules do have a unique role in the nervous system, that of serving as the final engram of experimental memory, the permanent memory trace.

The major function of all known types of RNA is participation in protein synthesis, and no other function has thus far been demonstrated. If RNA participates in memory storage in a neuron it might well involve some participation of the protein synthesizing mechanism. One might expect to find a change in this mechanism during cellular activity or that interference in this protein synthesizing mechanism by RNA would cause changes in the overall behavior of the cell. Looked at from this point of view it would be surprising if RNA function was not involved in some way in memory storage.

The question of course arises whether, if memory traces result indirectly from effects of RNA upon protein synthesis in the neuron, there is not an inherent difficulty in any hypothesis which attempts to explain the encoding of memory solely in terms of one set of molecules. It is true that there is a continuous process of renewal in the neuron and that RNA controls protein synthesis, and protein controlled synthesis of other metabolites in the cell. But we must look more broadly at the cell as having regulatory mechanisms whereby protein, hormones and metabolites of low molecular weights may in turn by feedback regulate the synthesis of RNA and DNA.

Taking the neuron as a unit RNA synthesis is localized in the cell body whereas the other functional activities such as synaptic transmission is localized in peripheral processes of the cell. The centrally synthesized substances then reach the synapse by axoplasmic flow. Anything that stimulates the neuron produces changes in its RNA and proteins and conversely, remove afferent stimulation and you can cause marked changes in the cell body. We must therefore learn what permanent changes in neuronal structure and function result from stimulation of the neuron and what the mechanism of production of these changes really is. This kind of knowledge could bridge the gap between current investigations which emphasize the importance of particular molecules in memory storage and the cytologically and physiologically oriented theories of Cajal, Hebb, and Sholl, in which emphasis is on the importance of synaptic inter-relationships between neurons. These older theories stressed the role of growth of new axonal and dendritic connections as a fundamental process in memory storage and learning.

At the time the cytological theories of learning were formulated little was known of the biochemistry of DNA and protein synthesis. The present molecular theories and the older cytological approaches to the problem of memory are by no means mutually exclusive. To conciliate the two, one needs only to postulate that a major function of the synthetic mechanisms of the cell body is to provide molecules necessary for the growth and maintenance of axonal and dendritic connections. Weiss[4] has stressed that the adult as well as the immature neuron appears to be in a perpetual state of growth or regeneration or both and he has emphasized the importance of axoplasmic flow for this process. The new proteins required for axonal growth would have to be synthesized in the cell body by the RNA and reach the synapses by the process of axoplasmic flow.

There would appear to be a great advantage of including synaptic structure and function in any hypothesis of memory storage, since this would take into consideration a unique cytological feature of the neuron namely that a vast amount of its surface area and functional mass is located a great distance from the central cell body. We must remember Sholl's calculation that the activity of a single cortical neuron may well affect that of 4000 other neurons while a single neuron may have more than 50 dendritic branches. No other type of cell in the body has thus become specialized for direct intercellular communication.

A hypothesis which considers memory storage solely at the molecular level would appear unsatisfying unless somehow it also takes into consideration possible changes in synaptic structure during memory storage. Then we may be able to achieve a really comprehensive understanding of the phenomena of memory because it would oblige us to regard the phenomenon of memory as a property of a neuron or set of neurons rather than solely as a property of individual molecules. Nevertheless the molecular approach to the problem of memory has produced much evidence that RNA and protein metabolism are intimately involved in the process of memory storage.

Many problems, however, remain. Little is known about the turnover of phospholipids and sphingolipids in cell membranes. The behavioral effect of drugs which produce a specific inhibition or acceleration of synthesis of essential metabolites has received scant attention. The mechanism of synaptic influence on the metabolism of the cell body is another major problem to be solved. Does synaptic stimulation bring about induction of new enzymes to aid in establishing memory traces? Does RNA changes in response to learning situations, mean there has been induction of a new type of RNA or a change in relative proportions of different types being synthesized. It is clear enough that we are still a long way from positive answers to the basis of memory. But sophisticated techniques of molecular biology and enzymology are rapidly developing and we may expect much valuable data on biochemical processes involved in memory storage.

L.H.N.

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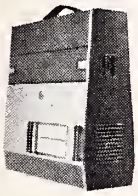

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Second Thoughts On Electrical Conversion Of Cardiac Arrhythmias

Depolarization of the heart by precordial countershock has been a most significant and decisive addition to anti-arrhythmic therapy. Presently it is a common and highly regarded method of conversion. It was orginally initiated by Zoll[1] and associates when they utilized alternating current in the management of ventricular fibrillation. Subsequently, both ventricular and supraventricular tachycardias were similarly managed. The direct current depolarization initially employed by Lown[2] substantially increased the effectiveness of the method and there resulted a material reduction in risk particularly when a synchronized shock was programmed outside of the ventricular and atrial vulnerable period. Now most authors agree that synchronized direct current precordial electroshock is successful in converting approximately ninety per cent of patients with atrial fibrillation to normal sinus rhythm regardless of the origin of the heart disease or the duration of the atrial fibrillation.

As might be expected the reports of early results were quite enthusiastic and stated that synchronized precordial direct current shock is simple and effective in terminating ectopic arrhythmias. It was however to be expected that with the widespread adoption of the method in a variety of clinical situations, some serious complications would occasionally occur. For example, electrical conversion of arrhythmias does not remove the dangers of embolic complications with which we have long been familiar when quinidine therapy is used. Now we have come into possession of evidence that cardiac standstill may occur with successful electrical conversion of atrial fibrillation, because some hearts have lost the function of the pacemaker either in the sinus node or elsewhere in the atrium or conduction system. Now we are told[3] that fatal ventricular fibrillation followed attempted conversion of digitalis induced arrhythmias. Other instances of ventricular fibrillation have been reported as well in patients not receiving digitalis.[4, 5]

The complications associated with direct current precordial shock should in no way stigmatize this method as a dangerous procedure. Nevertheless, they should bring into sharp focus the importance of judicious selection of patients for elective conversion. When the ventricular rate cannot be controlled with adequate doses of digitalis or when there is persistent heart failure following the onset of the arrhythmia, or when the patient is disabled because of awareness of the irregular cardiac rhythm, the physician is justified in undertaking electrical conversion. Even then additional criteria are to be employed by the physician. One is a precise electrocardiographic analysis of the ectopic mechanism. Another is technical perfection in the administration of the shock. A third is the exercise of extreme caution in the presence of excessive anti-arrhythmic therapy.

Rabbino, et al[3] report of sixty-five patients upon whom direct current countershock was used points up the significance of the need for the identification of the risks and hazards prior to conversion to help prevent many of the possible catastrophies. They point out that less than one-third of the subjects maintained their sinus rhythm for as long as two months after conversion when the current was applied to the precordium. Only one in ten continued regular sinus rhythm when direct current countershock was used at the conclusion of surgery for mitral stenosis and this even though quinidine sulphate was continued after the conversion.

The most frequent complication of direct current depolarization was the appearance of arrhythmias. Generally they were transient and benign but three cases out of the sixty-five developed fatal ventricular fibrillation, all of them associated with digitalis toxicity. The lesson is clear that in the presence of digitalis causing intermittent ventricular tachycardia — countershock should be avoided because of the extreme hazard of inducing ventricular fibrillation.

There is no doubt that direct current countershock is often decisive in the treatment of serious tachycardia of both supraventricular and ventricular origin. Furthermore, in a hypotensive patient with a compromised cardiac output, it is the procedure of choice. It offers dramatic benefit by avoiding time consuming delay inherent in the administration of cardiac depressants. But the method has not removed the necessity for using anti-arrhythmic agents, nor has it made the electrocardiographic interpretation of both simple and complex arrhythmias less important in the patients management.

L.H.N.

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"...it is extremely difficult and sometimes impossible to differentiate between 'pure depression' and anxiety and it is questionable whether depression without a certain degree of anxiety really exists."

Lehmann, H. E., Canad. Psychiat. Assn. J. *4(S)*: 1-12, 1959

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The Phenomena Of Hypnosis

In the past, the use of hypnosis in medicine was characterized by periods of enthusiasm and periods of neglect. The neglect came about Meares[1] points out, because suggestive hypnosis was used without an understanding of the psychodynamics of the condition being treated leading to mistakes and complications. There were extraordinarily immodest claims by certain practitioners. It received its greatest set back more recently however when Freud rejected it in favor of free association.

Since World War II there has been a revival in the use of medical hypnosis and an attempt is being made to adapt hypnotic techniques to insight therapy and in the form of hypnoanalysis which is being studied and investigated as a way to shorten the time and cost of psychoanalysis.

The use of hypnosis in some quarters is regarded as unenlightened and unsophisticated. In other quarters it is claimed that a better understanding of psychodynamics and a properly critical selection of cases could lead to a greater general use of nonspecific suggestion. There seems to be a wide scope for the greater use of hypnosis both preoperative and postoperative. Relaxing techniques and hypnoidalization could save much pain in the minor procedures of office practice. An enlightened use of hypnosis might turn out to be the ideal way for a woman to have her baby. Meares points out that it is now possible to help a patient sleep without sedation, to feel calm without tranquilizers, to experience pain without the hurt of it (suffering).

It could be that when we understand more about the phenomena of hypnosis that medical hypnosis will grow beyond the unsavory past with its memories of charlatons, entertainers, gifted quacks as well as the unscientific "scientist," that has gone before. To do this there will have to be more widespread understanding among the medical profession of the phenomena of hypnosis as well as the indications and contradictions for its use.

There is a great diversity of hypnotic phenomena. The hypnotized subject accepts suggestions from the hypnotist. As he becomes more deeply hypnotized he accepts more difficult suggestions. The subjects can be told to make his limbs rigid or move them in an uncontrollable manner. He can be told to see things that are not there and behave as if he were in imaginary situations. Such increased suggestibility is used by a skillful physician for the removal of symptoms or for the uncovering of psychological conflicts.

In addition to increased suggestibility which is a constant accompaniment of the hypnotic state regardless of the way in which hypnosis in induced, there are other phenomena. Some are a direct product of suggestion, but some appear to be independent of increased suggestibility. There is hypnotic rapport between doctor and subject. There is hypnotic sleep. There are various grades of amnesia after the patient emerges from the hypnotic state. There is regression by the patient to an earlier period in his life. The repressive mechanism which operates in most of us during the waking state shows signs of failure. Some patients show hysteroid behavior. There are hallucinatory phenomena which may be spontaneous but also induced by suggestions. Finally there is the remarkable phenomenon of post-hypnotic suggestion.

The hypnotic sleep is a prominent feature of the hypnotic state. Though the patients eyes close and he develops heavy regular breathing of sleep, he is in contact with the hypnotist, he hears him talking, accepts his suggestions in a manner which a patient in normal sleep does not. Curiously his electroencephalogram is that of the waking state not of the sleep type.

When a patient emerges from the hypnotic state his amnesia varies in degree. Often it should be suggested to the patient to forget his experiences during hypnosis which might be traumatic especially the abreaction of incestuous or homosexual ideas. In ordinary life we all are likely to forget unpleasant incidents—incidents of which we are ashamed, which might make us feel humiliated. It is a type of psychological defense which acts to save us the mental hurt of remembering unpleasant things. The skilled hypnotist will not allow his patient to suffer after emerging from hypnosis because of what took place during the session.

The hypnotized patient may appear to go back to an earlier period in life. He may start talking or acting as if some event in the past were actually taking place at the present time. He may think, act and behave in the way appropriate to the age of the regression. Suggested regression is a valuable technique in hypnoanalysis. The patient can be brought back to the age of a significant conflict which has been repressed. He can be brought to ventilate the conflict, re-experience the emotions which he felt at the time of the original trauma. The analyst is now in possession of material which he can integrate in waking psychotherapy. The reason why spontaneous regression occurs is because there is a failure of repression during hypnosis.

In hypnosis the patient may become aware of incidents of the past which have long been repressed from memory. If they don't come out immediately, they may with a few appropriate suggestions after which he begins to talk more clearly about the incident which now he is able to remember. Sometimes failure of repression is only partial, at other times it is complete and the unconscious material bursts forth with great pressure of ideation. At first the patient will experience only the thought of the repressed incident or he may start verbalizing the thoughts by entering the emotional situation with the patient. It is in this area that there may be serious psychological consequences when a subject has been hypnotized in a non-medical setting by a person not schooled in psychodynamics.

The post-hypnotic suggestion is an extremely interesting and important part of hypnosis and it is in this area where knowledge and skill and ethical conduct are of the essence. Post-hypnotic suggestion forms the basis of suggestive therapy and is one of the phenomena of hypnosis most difficult to explain on theoretical grounds. It appears that almost any thought, act or pattern of behavior can be used in post-hypnotic suggestion and the physician must be careful to limit himself to the use of post-hypnotic suggestions for therapeutic purposes only. It is the custom when giving a suggestion to specify some time in the future when the suggestion is to be carried out. There are well documented instances of post-hypnotic suggestion being carried out some years after they are given.

There is some variation as to the way in which a post-hypnotic suggestion is fulfilled. The patient may act quite suddenly and spontaneously and often out of context with the matters which are occupying his attention at the time. When he does act he may seem surprised and then invariably rationalizes his act by giving some excuse for it. In other cases the subject feels he wants to do the act but at the same time if it is inappropriate there will develop increasing anxiety and tension. Then the subject suddenly does act, rationalizing it later. The mounting tension preceding the act and its sudden dissipation on performing the act shows a clear resemblance to obsessive-compulsive behavior.

It is clear enough that there are many pitfalls and dangers in the use of hypnosis and that it is no field for a novice or a technique for the amusement of an audience by a stage hypnotist.

L.H.N.

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The Functions Of Dream Cycles

Find out about dreams and you will find out about insanity—Hughlings Jackson

Since 1953 when objective evidence of the existence of the dream (D) state became available many puzzles became clearer but many still remain. Of basic importance was the recognition that there are dream cycles in the average young adult which are of many minutes duration and total 20-25 per cent of the total sleep period. Another fact that became clear was that there existed a dream center in the midpons which continues its rhythmic cycles even in decorticate animals. Furthermore, the D-state is a different phenomenon than the sleep state and is essential for life since dream interruptions lead to serious disruptions of the personality. In this sense then the function of the D-state is to keep the organism living in a healthy state.[1]

But this is a rather vague statement of D-state function and not too fruitful for further investigation. We would be better off if we examined the various functions or roles of this state in the integrated functioning of the organisms, chemistry, physiology and psychology. As far as neurochemistry is concerned, little inquiry has thus far taken place. Certainly a recurrent regular basic biologic state such as the D-state which is characterized by a well-defined neurophysiologic picture must certainly have central chemical changes underlying it. There may be a neurohumoral mechanism perhaps acetylcholine discharge which is well known to be involved in most multineuron events in the nervous system. Or there may be some substance gradually building up during waking and non-dreaming sleep which regularly discharges. But this is no more than saying that there is an accumulable tendency to have D-periods which we already know.

The objective evidence of dreaming has made possible studies of the influence of drugs on this state. Tranquilizing drugs seem to decrease D-time. So does atropine which prevents acetylcholine activity. What of course would be extremely useful is a drug that either would increase D-time or at least not reduce it. One such drug is gamma-butyrolactone which causes sound sleep with normal D-periods.[2] Similarly is the action of sodium butyrate which induces D-periods in cats.[3] We may soon be able to produce good sleep and normal D-states at will.

Another question which has come under scrutiny is the relation of the D-state and mental illness, now that one can determine objectively when a person is dreaming. Many speculations have been set at rest. Schizophrenic patients have the same duration of D-time as normals do. So did a group of six middle-aged depressed patients. On the other hand, patients under stress, such as those entering a psychosis may have an increased D-time. But such a patient because he has been anxious, lost sleep and D-time and is frequently awakened by frightening dreams, may be making up D-time when the tests were made. But since lost D-time leads to psychosis, one must always think of the possibility that some of the symptoms associated with acute psychoses such as excessive fantasies and visual hallucinations are actually the result of superimposed D-deprivation rather than part of the underlying psychiatric problem. In such a patient a drug is badly needed that will tranquilize and allow sleep but without depriving the patient of further dreaming.

The next problem is whether studies on the D-state have shed any light on the experience of dreaming. There is little doubt that the dream content is reflected in the eye movements, pulse, respiration and blood pressure. A close correlation exists between the content of the dream and eye movements, and there is also a correlation between duration of the eye movements and duration of the dream. Such evidence makes clear that a dream is not momentary, not a flash through the mind, but a prolonged process. There are also related changes in pulse and respiration depending on the vividness or emotionality of the dreams. Thus perhaps the best formulation at present would be to say that a primitive state—the D-state, necessary to all mammals involves eye movements and a general autonomic outflow and these are synchronized somehow with the psychologic experience of the dream.

Another interesting question is whether there are systematic differences between dreams at different times of night. It appears at present that there are,[4] specifically, that dreams occurring later in the night or nearer morning tend to be more vivid, more emotional, more bizarre, in other words more "dreamlike." The explanation for this is presently under study.[1]

There are four or five dreams in the same night. The question arises, are they related in some way. The evidence thus far available indicates that often the same content recurs or more frequently the same problem is dealt with in successive dreams. In fact, at times the explanation of the problem becomes more and more direct in successive dreams on the same night.

Another question of interest is whether external events can influence or initiate dreams. To study this problem an external stimulus such as a sound, a light, or a jet of water on the skin was applied and found indeed to be incorporated into the dream content in about 20-60 per cent of the cases, but only if the stimulus was introduced during the dream period.[5] This has been confirmed in a number of laboratories. However, it is possible that the percentage of incorporations would be higher if symbolic or greatly distorted incorporations were considered as well as the direct incorporations usually sought. It is clear that a stimulus presented during the D-period can definitely be incorporated into the dream content. Equally important however is the fact that it has never been possible to initiate a D-period by introducing any kind of external stimulus during non-dreaming sleep. The D-state is clearly of endogenous origin.

The final question is why some people remember their dreams and others don't. There have been several studies comparing groups of "recallers" and "non-recallers" of dreams. The "recallers" may on the average have a little more D-time. More important however are general differences in personality between the two groups. The "recallers" seem to be more introspective, more interested in the workings of their minds, more tolerant of ambiguity than the "non-recallers." In addition more superficial, often conscious factors also obviously play a part in the recall of dreams.[6] For instance, it is well known that a patient in psychoanalysis whose analyst asks him about his dreams will usually begin to recall more dreams. A conscious interest in dreams and sleep among researchers for example will usually be associated with increased dream recall. Finally, frequent awakenings are also associated with greater recall, since a dream will generally be remembered if an awakening of at least a few minutes in length occurs during or soon after a D-period. This is a common finding in patients who are ill and have frequent awakenings during the night.

It must here be emphasized that the studies mentioned above so far provide no grounds for rejecting Freud's basic thoughts on the dream itself, especially his formulation of the meaning of the dream as the fulfillment of an unconscious wish and the language and symbolism of the dream as "primary process." However, Freud's theory that one of the functions of the dream is the preservation of sleep, is open to question, since in fact stimuli threatening to disturb sleep and wake the dreamer never appear to initiate a dream. In this sense the dream or the D-state functions only to preserve itself.

Finally, those psychoanalytic formulations implying that certain aspects of dreams are due to the prevailing state of sleep should perhaps be reexamined in view of the concept presented above that the dream does not really occur in the state of sleep which has its own organismic character, but in a separate state, the D-state. The study of physiology of dreams is thus not a fool's errand. It is quite likely that through the tortuous pathways of insanity, along the road to the unconscious, it may lead us to the ultimate conciliation between mind and body and who knows—perhaps lead to a reconciliation between neurophysiology and psychoanalysis.

L.H.N.

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Potassium In Heart Disease

Potassium (K) salts are currently used for the treatment of digitalis intoxication and in heart failure, especially after hypokalemia has occurred after aggressive use of diuretics.[1] They are also used prophylactically to prevent losses of K during the long term administration of thiazide diuretics. Occasionally K is used in myocardial infarction along with glucose and insulin. In short, we have settled into a routine which does not take into account some of the hazards that could result if K is given to patients with digitalis intoxication and in patients with high grade A-V block.

In order to obtain a clearer view of K it is worthwhile to review what we know about how this ion behaves in heart disease. We know that cardiac and skeletal muscle of patients dying with congestive heart failure is abnormally poor in K and that Na tends to be retained. This is attibuted to overwork. Overworked skeletal muscle becomes deficient in K and the overworked heart muscle does also. In fact, in right sided failure the right ventricular fiber is deficient in K and in left sided failure the left ventricle is equally deficient. Observations such as these would make one suppose that in heart failure K is mandatory. They are supported by studies by Brown, et al.[2] who observed that patients with heart disease will retain K after oral administration and warned that this ion should be used with care in heart disease patients since they do not excrete K as rapidly as the normal patient.

Not only does heart failure cause heart muscle to lose K, but so does toxic doses of digitalis.[3] The amount of K lost from cardiac muscle increases with the dose of digitalis glycoside. What is simpler then, than to believe that this K loss in digitalis toxicity can be prevented by administering excess K. What is forgotten here is that therapeutic doses of digitalis actually cause a net gain in K by cardiac muscle and that in such circumstances potassium supplement is unnecessary.

It is obviously desirable to reverse any potassium loss if there is associated hypokalemia. But if digitalis poisoning prevents potassium entry into cells, there remains the possibility of producing K intoxication, for if K can't enter the cells, then very small amounts administered can cause rapid rise in the plasma level of such magnitude as to result in early cardiac standstill. It is clear from this that it is not the total amount of K given but the level of plasma K that is the threat to the organism and that to give potassium to a fully digitalatized patient with a normal serum K may lead to K intoxication.

From what we know about the toxic effects of K, some of them are quite similar to those observed in certain stages of digitalis intoxication especially with A-V block. When K is administered, the rate of administration becomes important since this will reflect the peak concentration at the site of action. A slow rise by slow intravenous infusion in an experimental animal[4] induces widespread block in all parts of the heart and a reduction in pacemaker activity until death occurs by cardiac arrest. A digitalis poisoned animal also shows A-V block. It is not surprising therefore that several reports[5] shoud emphasize the dangers of treating a patient with digitalis intoxication showing A-V block by K. In two patients it led to cardiac arrest.

Potassium is also used prophylactically in patients being treated aggressively by thiazide and mercurial diuretics. There doubtless occurs an increase in urinary excretion of K which may lead to hypokalemia early in the treatment. In most patients, however, the renal tubules have the ability to counteract K loss and correct any resulting negative balance. It is of course common knowledge that when severe K depletion occurs after excessive diuresis, supplemental K is beneficial. Cort and Williams[6] have shown this clearly how heart failure improved when a severe depletion of K was corrected. Here again the best guide for the need of supplemental K is a low serum K.

From what has been said above there is a high risk involved in treating patients with heart failure, digitalis intoxication with high grade heart block and renal disease if the serum K is normal. There is no evidence that K antagonizes any feature of digitalis intoxication. It is of value in treating ventricular ectopic beats and even ventricular tachycardia, but it is contraindicated in atrial fibrillation with high grade A-V block and regular ventricular rhythm and in complete A-V block.

There of course should be no hesitancy about replacing K when there is hypokalemia since most of the severe toxic effects associated with potassium therapy have occurred when it was used in the presence of a normal serum K. If there is a normal serum K the use of this ion in daily doses to prevent depletion of K in patients receiving digitalis and thiazide is unsound in most instances and the routine use in such situations would appear to be unnecessary and should be discontinued.

L.H.N.

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Mutual Medical Dental Problems—Periodontal Disease

> *We must have real teeth up to a ripe old age.*—S. D. B. Jatti, Chief Minister of Mysore, 1955.

The ability to eat a meal without pain, to swallow a morsel of well chewed food, hence escaping indigestion and to avoid the embarrassment of premature tooth loss is a vital necessity for the health and well being of any population. In this country dental caries is the commonest form of chronic disease and hopefully is susceptible of control by fluoridation of the public water supply. Periodontal disease is also in the process of reduction by brushing of teeth after meals and elimination of food detritus from the mouth. It is also in the process of reduction of frequent scaling of teeth and removal of calculus which constantly form on them. The magnitude of the problem of periodontal disease in our country is not entirely known, but what is clear is that it leads to premature loss of teeth and is a constant source of infection of the body by bacteria, some of which can cause bacterial endocarditis and other metastatic infections in various organs.

Periodontal disease is a complex inflammation of the supporting tissues of the teeth which usually first manifest itself in the marginal gingival areas of the dental arch. Eventually the underlying alveolar bone around the roots of the teeth is destroyed and the teeth involved must be removed to relieve the patient of suffering. When a disease of such a nature affects the health, comfort and personal dignity of a large number of adults in the prime of life, it presents the nation concerned with a problem of great importance, and it is difficult to understand why it is not sufficiently emphasized even in those countries where public health programs are underway.[1]

Surveys by the U.S. Interdepartmental Committee on Nutrition for National Defense (ICNND) have demonstrated convincingly that tooth decay is a surprisingly insignificant factor in certain underdeveloped nations, although in this country dental caries is quite high. In Ethiopia[2] 77 per cent of people examined were totally free from caries and those under 40 years of age averaged less than one decayed or missing or filled tooth per person. In Viet Nam[3] it was the same as in Ethiopia and treatment of dental caries is a very small problem at present. In Thailand[4] tooth decay is practically nonexistent with an average of 0.13 decayed or missing or filled tooth for children in the first decade and .84 for the 20-29 year age group. Why tooth decay in this country is of an incidence of 40 per cent while in underdeveloped countries it is virtually nonexistent is entirely unknown.

The same surveys, however, revealed a shockingly high incidence of periodontal disease in these same countries. In Ethiopia 30 per cent of people had disease in the advanced stages by age 25-29 and periodontal disease afflicted 84 per cent at age 50. In Viet Nam 91 per cent over age 10 were afflicted with periodontal disease. The same sorry tale comes from Thailand. Although tooth decay is practically nonexistent, 75 per cent of persons age 44 are afflicted with irreparable damage due to periodontal disease.

In India[1] 80 per cent of children suffer with periodontal disease severe enough to involve alveolar loss in many age 12-16 and in almost all over age 16. These reliable figures show the magnitude of the problem. Children who form the life blood of the country suffer from a remediable disease. When they have reached manhood they suffer from periodontal disease and its attendant complications. They lose teeth and get old prematurely. Longevity is shortened and working capacity is lessened.

The overwhelming causative factors observed by ICNND are local, primarily calculus, a hard irritating deposit of saliva which forms on the teeth together with poor oral hygiene. Proof came from Ethiopia when ICNND found calculus deposits were directly related to the condition of the periodontal tissue. Abundant deposit of calculus

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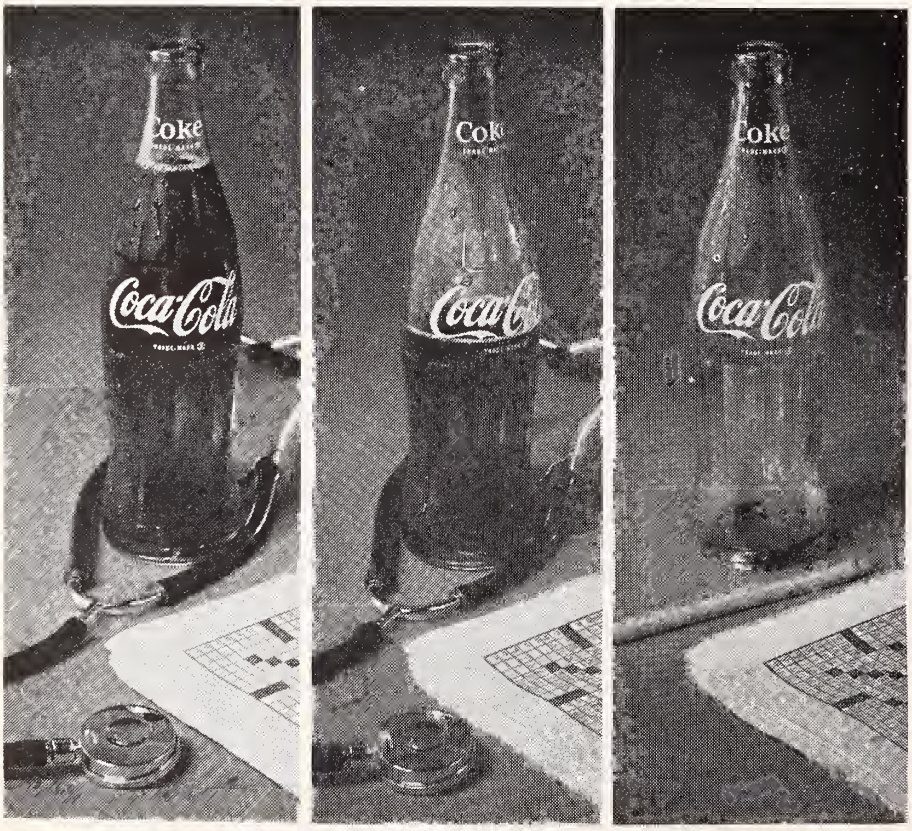

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and food debris were found in all mouths examined. In patients with small amounts of calculus and food debris, little periodontal disease was found, whereas in more advanced periodontal disease heavy calculus and debris was found. In Viet Nam heavy deposits of calculus were present in the mouths of nearly every person aged 12 or older.

If people engage in regular prophylaxis few suffer periodontal disease. In the military who are taught the benefits of good oral hygiene, less than 20 per cent suffer from periodontal disease. Their civilian counterparts show an incidenec of 41 per cent suffering from periodontal disease. Such figures supply strong support for the effectiveness of simple calculus removal and improved oral hygiene in the treatment and control of periodontal disease in an affected population.

It is clear that the two formidable diseases of the mouth, dental caries and periodontal disease, are controllable. The former by fluoridating the public water supply, the latter by dental aides trained in technique for prevention and control of periodontal disease, by periodic removing of calculus and oral hygiene by brushing to avoid collection of food debris. A disease like this which affects the day to day comfort and physical well being of men, women and children the world over, should be given top priority by public health agencies and those who are responsible for rendering aid to foreign nations. For here is a way of contributing to the health, comfort, dignity and longevity of all peoples, including our own.

L.H.N.

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Retine And Cancer

In regeneration and the healing of wounds, the cells which previously were linked with each other in a subtle intercellular relation, now revert at short notice to a unicellular way of living, that is multiply and spread. In the epithelium of our undamaged skin, cell is strongly attached to cell, forming the tough structure which we need for our protection. But if we cut ourselves the cells are released from their neighbors, resume motility, creep into wounds and multiply until they have filled the gap. Once cell touches cell, healing is completed and the tissue returns to its initial state. Some cells have, it appears, retained the capacity to switch back and forth between quiescence and growth. It is obvious that there must be some sort of a switch mechanism, a subtle regulation which controls these changes.

The ideal model system for studying this phenomenon is the tissue culture. If one places two pieces of tissue in their culture medium not too far removed from one another just as happens in an open wound, the cells made themselves free from the surface, crawled away and multiplied. Where the cells from the two cultures met, their motion and proliferation stopped and the cells returned to the resting state. Thus Abercrombie called "contact inhibition." The subtle regulatory mechanism underlying these changes is unknown. It is however urgent that we know what this mechanism is because it is lost in cancer. When two explants were made from cancer tissue, the cells did not stop dividing on contact but grew over one another in a disorderly fashion. They behaved as they do in the sick organism where they invade the surrounding tissue. They seem to have lost the regulatory mechanism which restores and guards the quiescent state.

Szent-Gyorgi having found both a growth promoting (Promine) and a growth inhibiting substance (retine) in thymus extracts undertook to study this phenomenon further. Their early extracts, being impure, at times retarded, and at other times accelerated growth, and in fact one and the same extract could turn from an inhibitor to a promoter! It was an exasperating and defeating experience until it dawned on the author that he was really working with two antagonistic substances, so closely related chemically that in one form it inhibited and in another it promoted cell growth.

Johnsson an associate of Szent-Gyorgi then studied retine in tissue culture and found it cytotoxic on the cultivated cancer cell while promine caused their hypertrophy and increased intercellular distances. If the cancer cells were inoculated in the mouse, then exactly as occurs in tissue culture, the tumor could be arrested by retine and accelerated in growth by promine. Perhaps the substances these workers were dealing with was not just a thymus product but a general tissue constituent.

Retine ought to be present in animals in whom cancers do not occur. M. Rosarii Schier was impressed with the fact that no malignant growth has yet been reported in molluscs. Accordingly she prepared clam extracts which gave a strong inhibition to cancer growth. A similar striking inhibitory action to cancer growth was found in mushroom extracts. Such observations strongly suggested that retine may be a universal cell constituent and that retine and promine may actually be the regulators of cell division developed in the evolutionary step from monocellular to multicellular organization.

If retine was to have any benefit in cancer therapy it would have to be produced by the ton and so Szent-Gyorgi turned his attention to the chemical isolation of this fascinating material. Both Hegyeli in Szent-Gyorgi's laboratory, S. Payne of Worcester Institute of Experimental Biology and Medicine, as well as L. Egyud finally achieved their isolation and it turned out that retine is in all probability a methylglyoxal derivative although much more active than its precursor. Clearly the next major step is to identify retine and a colloid to which retine and promine seem to be bound which protects the body from the toxic actions of retine as well as greatly enhancing its activity in the body. This is confirmed by experiments in tissue cultures in which retine alone is 25 times less active than colloid bound retine. This certainly supports the view that colloid has a hand in retine activity and that when retine is injected or ingested it finds plenty of it in the animal.

A host of intriguing questions at once come to mind. Does retine and promine have anything to do with cancer? Can retine retard and cure it as it does in tissue culture? Such questons will be answered when these substances are available in sufficient quantity and purity. What can be said at present with fair confidence is that if a tissue loses its ability to produce it, it should lead to unbridled growth. Perhaps this is the manner in which carcinogenic agents work, by injuring retine production. Since retine acts equally by mouth and by injection and does so in very small quantities and seems to be in therapeutic doses devoid of untoward side effects, it, when available in quantity, can be tested on patients without causing inconvenience, a highly desirable property as compared to other anticancer agents.

Much is yet unknown about retine and micro methods are needed for its estimation in the blood. Nevertheless it seems likely that better knowledge of retine and promine will open new direction for an attack on cancer and some of the fundamental problems of cellular biology.

L.H.N.

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The Renin Angiotensin-Aldosterone System (RAAS) In Normal Man

As a result of new tools for research such as accurate methods for estimating renin activity and aldosterone production, new information has become available on the role of the adrenal cortex in the homeostasis of electrolyte metabolism in health and disease.[1] Quickly our understanding of many physiological and pathological conditions has been clarified. Now knowledge of the relationship of normal renal function to normal suprarenal function has become essential to the understanding of numerous disease states. The role of the renin-angiotensin-aldosterone system (RAAS) until very recently was believed to have only pathologic significance in the production of hypertension and in renovascular insufficiency. Now we know that it is of great importance in normal day to day and hour to hour regulation of aldosterone secretion and of electrolyte metabolism as well as in many disease states.

Renin is an enzyme released by cells in the walls of the entering glomerular arteriole. This occurs under normal conditions of daily living. Once released, the enzyme acts upon a circulating polypeptide that arises in the liver and sets off a series of reactions, the end product of which is angiotensin II. This polypeptide consisting of a known sequence of eight amino-acids is the most potent vaso-pressor material known, much more so than aramine or levophed. In physiological amounts this compound provides a stimulus to the adrenal cortex for the specific elaborations of aldosterone without at the same time including secretion of cortisal which is under ACTH control. Although angiotensin II itself can stimulate aldosterone secretion, its action is improved in the presence of a normal amount of ACTH. It is thus evident that renin is the initiating force that leads to an increase or decrease of circulating angiotensin II. This in turn increases or decreases secretion of aldosterone. The question then is what regulates release of renin from the kidney?

There are two major ideas about this. One is the concept of a stretch-receptor in the juxtaglomerular cells adjacent to the afferent glomerular arteriole. The other concept is that of a "sodium load receptor" in the cells of the macula densa portion of the juxtaglomerular apparatus at the distant tubule. There is much support for each of these concepts, stretch or chemoreceptor hypothesis. In fact either or both operate under the same conditions so it is easier to deal with the stretch receptor hypothesis in our attempt to understand the operation of the RAAS system.

A major end product of increased release of renin is increased secretion of aldosterone. This potent steroid has a major renal function which is to promote at the distal tubule reabsorption of some of the sodium ions that arrive there in the tubular fluid and thus sodium is retained and potassium ions are given up to the urine. All is in equilibrium when the blood pressure is normal. There is a normal stretch on the juxtaglomerular cells normal renin release, normal angiotensin II production, normal aldosterone production, electrolyte equilibrium and a normal blood pressure.

If the stretch at the receptor site is diminished as for example in acute hemorrhage or shock, lots more renin is produced, the whole system is mobilized to minimize the possibility of losing sodium via the kidney, sweat glands and gastrointestinal tract. On the otherhand, if plasma volume is expanded as for example by administration of saline and the stretch increases, then less renin is released, less aldosterone is made, more sodium is excreted and plasma volume is thus allowed to return to normal. There may be another humoral substance as yet unidentified, a salt losing hormone which inhibits sodium reabsorption in the proximal renal tubule.

This double effect of volume expansion; rejection by the proximal tubule of some of the filtered sodium, and suppression of aldosterone production insures excretion of sodium by both proximal and distal tubules and minimizes loss of potassium from the body.

In normal people effects of low sodium feeding on the RAAS is to reduce blood volume with the purpose of conserving sodium. The RAAS is stimulated further and most intensely when we are upright on a low sodium diet. On the otherhand, if there is sodium intake, the plasma volume increases, the stretch increases, renin release decreases and the RAAS is suppressed to allow for increased urinary excretion of the sodium.

In our daily lives a good part of which includes variation in salt intake and also shifts from the horizontal to the erect position and vice-versa, the RAAS is an important regulatory unit. It has been known for several years that aldosterone production is greater when man is erect than when he is recumbent. Now we know why. It is because in the upright posture there occurs an increase in plasma renin activity which leads to an increase in aldosterone secretion and retention of sodium. If the horizontal position reduces renin production and aldosterone secretion and promotes sodium excretion, it becomes clearer why sick people that need to get rid of edema, do better lying down than standing up or walking around.

The daily variation in activity of the RAAS brilliantly clarified by the work of Conn and his associates has added another to the growing list of physiological rhythms termed circadian rhythm in man because they exhibit variations in the twenty-four hour cycle.

L.H.N.

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Physiology And Flight

Dr. Charles Berry, chief physician for the astronauts, and his associates believe it will prove no more of a strain on the pilots than did Gemini 5.

The heart rate and blood pressure of Colonel Cooper and Commander Conrad are returning to normal at about the same rate of the Gemini 4 crew after their flight in June. They are also rapidly regaining the weight they lost during the flight.

Since the beginning of aviation the physiological problems of man in flight have been a fundamental factor in ever-increasing speed and altitude.

The physiological problems of man in space are staggering in their complexity.

The first phase of the National Aeronautics and Space Administration's Biosatellite Program had the following objectives:

"To discover whether complex organisms could survive space conditions, and to test life support systems.

"To determine whether complex organisms (dogs and primates) could survive during launch, orbital space flight, re-entry and recovery.

"To determine the effects of ambient space radiation and any obvious effect of weightlessness on biological organisms."

Flights Prove Validity

The space agency said "these biological studies indicated that manned space flight was practical and the various cosmonaut and astronaut flights have proven the validity of the results."

It added: "As progress is made in the manned exploration of space the biological effects of the unique environmental factors found only in space become of greater importance."

The United States Biosatellite Program is a second-generation series of carefully planned and selected experiments, including some highly sophisticated ones, that have required several years of baseline study and equipment development.

The program has been designed to study such problems as zero gravity or weightlessness, the effects of weightlessness combined with radiation, and the removal of living organisms from the earth's rotation.

These studies seek out the hazards to astronauts, and determine and define the problems that pertain to human performance. For example, it has been learned that the effect of 10 days of complete bed rest was the decalcification of bone, loss of muscle tone and physical capability, as well as certain cardiovascular changes.

Sensory Effects Watched

Scientists have been particularly concerned with the effect of continued sensory deprivation on behavior and performance of the astronauts.

It appears from the preliminary reports that Colonel Cooper and Commander Conrad experienced no unusual sensory deprivations.

A great deal of the research in space medicine has been done with primates. For example, primates have been subjected to full flight profile including a 100-revolutions-per-minute spin.

During all phases of experiment, motion pictures were taken. Deep electrode implants were made in the brain and catheters were placed in the large blood vessels.

The animals were retained in form-fitted couches similar to those of the astronauts. In this series, all animals were normal following the tests and exhibited no unusual behavior or effects.

In the second series of experiments carried out at the University of Southern California the animals were put in special form-fitted counches allowing free movement of the body, head and arms.

Immobilization A Factor

However, when these primates were placed with their backs facing accelerative force the animals suffered considerable damage, such as swelling of the face and eyelids. At high centrifugal force often the eyes were swollen completely shut. The animals appeared dazed, would not respond and would not accept food.

However, reactions began to approach normal after a few minutes.

One of the most serious problems is immobilization combined with the problem of weightlessness, which scientists fear may lead to cardiovascular deterioration, bone demineralization and muscle atrophy.

In light of the recent experience of Gemini 5, these problems do not exist to a degree that is dangerous.

The spectacular success of Gemini 5 based on preliminary medical reports will enable NASA to proceed with plans for Gemini 6 and Gemini 7 with confidence that man can assume the role of an explorer in space just as he has been since mankind's earlier exploration of the earth's surface.

By Howard A Rusk, M.D., reprinted with permission of The New York Times, *September 5, 1965.*

Drug Dosage For Children

Because a child is almost as tall as his father doesn't necessarily mean that he should receive almost as large a drug dosage.

There are many rules of thumb for prescribing drugs for children—and most of them are wrong, says an Alabama physician in the current Journal of the American Medical Association.

"Age is an almost completely worthless, useless, and often dangerous basis for determining dosage," said Harry C. Shirkey, M.D., of Children's Hospital and the Division of Clinical Pharmacology, Department of Pediatrics, Medical College of Alabama, Birmingham.

Weight has a marked advantage over age in determining dosage, but is reliable only with children of approximately the same size, he said.

One of the most reliable guidelines in prescribing drugs for children combines the factors of total skin area and weight, Dr. Shirkey said. His article outlines for physicians the details of this method.

Dr. Shirkey notes, however, that even this generally reliable procedure should not be used for infants. No drug dosage conversion method is satisfactory for newborn babies. Their inadequate organ development and immature enzyme systems make dosage estimation almost impossible.

The only reliable prescription procedure for babies, particularly for premature ones, is to base dosage on clinical data from other infants, says an editorial in the same issue of J.A.M.A.

Arriving at proper dosages for infants or even children has presented great problems for physicians. No one wants to use children as "guinea pigs" in drug experiments, and yet regulations have inhibited clinical investigations, the editorial said.

"It is understandable if the 'patient consent' and other recent regulations for the investigational use of new drugs have resulted in some reluctance to undertake drug investigation in children," said the editorial. "These regulations have raised psychological barriers against pharmacological investigations in adults—barriers that can only seem greater to the investigator working with children."

The AMA has worked with the Pharmaceutical Manufacturers Association to include adequate children's dosage information on new drugs. Additional knowledge is needed, however, for adequate labeling and prescribing of drugs to be given to children.

"Food and Drug Administration requirements, and the growing public knowledge of the benefits derived from properly conducted medical research, also should encourage studies on the use of drugs in children," the editorial said.

Evaluation Of A Combined Therapy In The Treatment And Prophylaxis Of Urinary Infections

Franklin I. Shuman, M.D. and Ronald I. Goldberg, M.D.

■ The search for the perfect urinary antiseptic has indeed been a long one. Davis[1] has stated that no drug for the treatment of urinary infections was available forty years ago that was chemically stable, non-toxic in therapeutic doses, not irritating to the urinary tract mucosa, bactericidal in high dilution of urine of any reaction, and that was capable of being excreted practically unchanged in full amounts by the kidneys.

The progress that has been made during the past four decades has indeed been considerable. In 1931 the ketogenic diet was made practical. Rosenheim was stimulated to use mandelic acid in a dosage of 12 gms. daily when the obviously limited usefulness of this ketogenic diet became apparent. This amount of mandelic acid was combined with 8 gms. of ammonium chloride and a fluid intake of 32 ounces was maintained. The pH of the urine was then found to be generally below the level of 5.5. The inability of the patient to tolerate such a regimen soon discouraged the use of pure mandelic acid as a urinary antiseptic.

In 1938 the chemical combination of mandelic acid and methenamine was accomplished. Although this combination was soon found to be bactericidal in varying concentrations at different pH levels, the importance of this work was not fully realized due to the rapid increase in interest over the use of sulfanilamide in the treatment of urinary infections. It is now well known that although the sulfonamids are frequently effective, resistance may emerge rapidly. The required close medical supervision and the toxic properties of the sulfonamids renders such therapy difficult when administered over a long period of time.[2] The importance of the development of resistant strains of bacteria during sulfonamid therapy is so great that it has been stated that this development of resistant strains of bacteria is the major cause of failure in the treatment of such urinary infections.[3]

The importance of an adequate therapy for urinary infections is exemplified by Kass who has stated that pyelonephritis and related infections of the urinary tract are amongst the most frequently encountered and that these infections are the most difficult to manage.[4] There are numerous requirements for an ideal therapeutic agent in the treatment of these infections. The agent should possess broad-spectrum antibacterial activity, continuous acidification of the urine, complete lack of toxicity, allergic aftermath or resistance, rapid analgesic effect, complete safety even with prolonged use, and effective prophylaxis where indicated. The agent therefore should provide an analgesia, antisepsis, and acidification without toxicity.

A drug that for many years has proved to be of value and non-toxic after prolonged use is methenamine. This drug, which is most active in an acid medium, can be given over long periods of time with benefit in the milder forms of urinary infection and in patients that cannot tolerate the newer antibiotics or sulfonamids.[5]

Kass[6] has stated that E. Coli, arerobactor aerogenes, proteus, Pseudomonas aeruginosa, staph. aureus and S. fecalis are sensitive to methenamine in vitro. Kass further states that the advantage of this drug is in its ease of administration, relative lack of toxicity and effectiveness in vitro, against a broad range of bacteria. In patients with chronic infections, bacilluria may be partially suppressed for long periods of time without the emergence of resistant strains or variance of the pathogens. A further advantage is that the emergence of, or reinfection with other bacterial strains, will still prove sensitive to this broad range medication.

The failure of simple mandelamine (methanamine mandelate) therapy is due to the fact that approximately 10 to 20 per cent of urinary tract infections are caused by bacteria which produce large increases in the alkalinity of the urine.[2] It is therefore important that the therapy of these infections include an acidification of the urine during such therapy. The need for an analgesic agent as part of the therapeutic regimen in urinary tract infections is well known to anyone who has suffered the dysuria, frequency and urgency that accompany such an infection. The demulcent menstrum of Triticum and Zea provide a soothing coating of the urethra, protecting the surface from irritating

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action of the urinary salts. Relief of pain is usually prompt following administration of such materials.

Although methenamine is a slightly alkaline salt, it may be administered in combination with sodium and lithium benzoate. In the presence of the digestive acids the sodium and lithium benzoate are converted into benzoic acid. In the liver, glycine and benzoic acid unite to form hippuric acid which acidifies the urine but does not acidify the entire system.

Methenamine is one of the most thoroughly tested urinary antiseptics. It has been found efficient in hundreds of thousands of cases and owes its popularity to the fact, when properly administered, it is well-tolerated and non-toxic. In an acid medium, as in an acidic urine, methenamine releases formaldehyde, creating a mild formaldehyde solution and therefore, by its use, the urine can be kept bacteristatic against common invading organisms. Methenamine is effective in most gram-negative bacillary infections which cause the majority of urinary tract infections. Particularly good results may be obtained with methenamine in the treatment of Escherichia coli infections which represent approximately sixty per cent of the urinary infections encountered. It is bacteristatic and has particular usefulness in the management of longstanding infections, secondary to retention urethral catheters or cord bladders. It can be alternated with sulfonamide, using methenamine for three weeks and sulfonamide for one week.[7]

Since methenamine itself is not germicidal, and since the antiseptic effects of this agent are due to the liberation of formaldehyde, the concentration of formaldehyde liberated in the urine is of extreme importance. A classical experiment was conducted by Shohl and Deming[8] some four decades ago. Their classical in vitro data is still appropo four decades later.

Employing a culture of E. coli and freshly voided sterile urine at 37 c., it was demonstrated that formaldehyde solutions of 1:5000 to 1:10000 will kill 80 to 90 per cent of E. coli. The method used for the measuring of the free formaldehyde in urine was the Jorissen method as modified by Collins and Hanzlic.[8]

The amount of formaldehyde formed from hexamethylenamin at varying acidities was determined. It was clearly demonstrated that unless the urine was as acid as pH 6.0, germicidal strength will never be attained, regardless of the time the urine is retained. It was obvious that the pH was inversely proportional to the antiseptic power such that at pH 4.6 the concentration after the first hour is sufficient to cause definite antisepsis and in two hours sufficient to kill 90 per cent of the organisms. The amount of formaldhyde liberated from hexamethylenamin is also inversely proportional to the pH of the urine.

Table I
Distribution of Patients by Age

Age Group:	*No.*	*Per cent Series:*
20-29	1	2
30-39	7	14
40-49	14	28
50-59	12	24
60-69	11	22
70-79	4	8
80-89	1	2
	—	—
Totals	50	100

The present clinical series consists of 50 patients treated with a combination therapy of methenamine, litheium benzoate, sodium benzoate, and demulcent menstrum of Triticum and Zea.* Of the 50 patients treated in this series, 19 (38 per cent) were female. The majority of the cases were within the middle age group. (Table I). Thirty-four of these patients has what is commonly diagnosed as urinary tract infections, while 16 of the patients were treated with this combination of therapy in an attempt to prevent urinary infections during indwelling catheterization. The prevailing organisms in the patients with urinary infections were Escherichia coli, Aerobacter aerogenes and Pseudomonas alcaligenes.

These 16 cathete ized patients were randomly distributed into two groups and were treated with either this combination methenamine preparation or placebo in a double-blind manner. The average dosage in all cases was 15 cc's four times daily. The total daily dosage employed was therefore 80 gr. methenamine, 20 gr. lithium benzoate and 8 gr. sodium benzoate. At this dosage level no toxic manifestations were in evidence at any time during the study. At no time did any patients suffer from nausea, vomiting, or other gastrointestional disturbances which are so frequently encountered with many of the other urinary antiseptics.

The method employed to ascertain the effectiveness of this combination therapy in the prevention of urinary infections during indwelling catheterization follows. The patient was catheterized employing an indwelling catheter and a culture and colony count were performed on the catheterized specimen. The patient was then treated with this combination therapy in a dosage previously described. Following a duration of one to two

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*The trade name of Borcherdt Company for the combination of Methenamine, 20 gr., lithium benzoate, 5 gr., and sodium benzoate, 2 gr. per 15 cc. in a demulcent menstrum of Triticum and Zea in Urolitia.

TABLE II
RESPONSE TO MEDICATION

Response:	*Indwelling Catheterization* (*Urolitia*):	*Indwelling Catheterization* (*Placebo*):	*Urinary Infection*:
Good	5 (62%)	1 (13%)	24 (70%)
Fair	2 (25%)	3 (37%)	5 (15%)
Poor	1 (13%)	4 (50%)	5 (15%)
TOTALS	8 (100%)	8 (100%)	34 (100%)

weeks, a repeat culture and colony count were performed. The results were termed good if the colony count was under 5000, fair if the colony count was between 5000 and 10,000 and poor if the colony count was over 10,000. The treatment outlined above ranged from two to three weeks before a definitive evaluation of the results were made. This procedure was performed in 16 patients, 8 being treated with the methenamine preparation and 8 being treated with a placebo-preparation containing glycerine, U.S.P., caramel color, vanilla extract, saccarine, and butylparasept purified.

Of the 8 patients treated with the methenamine preparation, good prophylaxis was obtained in 5 of the patients (62 per cent), fair in 2 of the patients (25 per cent), and poor in 1 (13 per cent). Of the 8 patients treated with the placebo, good prophylaxis was obtained in 1 of the patients (13 per cent), fair in 3 (37 per cent) and poor in 4 (50 per cent). Of the 34 patients with diagnosed urinary infections treated with the methenamine preparation, 24 (70 per cent) were described as having good results, 5 (15 per cent) fair, and 5 (15 per cent) poor (Table II). The 5 patients who showed poor results after being treated with the methenamine preparation for two weeks showed a colony of over 10,000 and a culture of Escherichia coli or Proteus vulgaris.

In addition to the above bacteriologic results, it was noted that the patients with the urinary infections treated with the methenamine preparation developed a rapid improvement in the dysuria, frequency and urgency.

Summary

1. This study consists of 8 patients who were treated with a daily dose of methenamine, 80 gr., lithium benzoate, 20 gr., and sodium benzoate, 8 gr., and of 8 patients treated with placebo, in an attempt to prevent urinary tract infections during indwelling catheterization. In addition, this study consists of 34 patients with diagnosed urinary infections who were treated with the methenamine preparation.

2. Good prophylaxis of urinary infections were obtained with this combination of therapy in 62 per cent of the cases, while good prophylaxis was obtained with the placebo in 13 per cent of the cases. Of the 34 patients treated for urinary infections, 24 were termed good, 5 fair and 5 poor.

3. No toxic symptomology was manifested during the study.

4. The combination of medications found in Urolitia is an excellent aid in the treatment of urinary infections and may be employed as an effective prophylactic agent in patients with indwelling catheterization.

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We do not know what to do with this short life, yet we want another which will be eternal.—Anatole France

LOMOTIL *Pharmacologic Activity*

The significant pharmacologic actions of Lomotil are summarized as follows:

Evidence indicates that Lomotil acts directly by inhibiting excess peristalsis.

Lomotil is not known to inhibit nonpropulsive intestinal movements.

Roentgenograms demonstrate that this activity occurs within two hours after oral administration and persists for at least six hours.

Comparative studies in the rat show Lomotil to be more effective in inhibiting fecal excretion than either codeine or morphine.

Analgesic, anticholinergic, mydriatic and gastric secretory effects have not been significant.

Reduction of propulsive motility with Lomotil relieves spasm and cramping, allows physiologic absorption of fluid and reduces frequency of evacuations to provide prompt, symptomatic control of virtually all diarrheas.

LOMOTIL®

Each tablet and each 5 cc. of liquid contains:

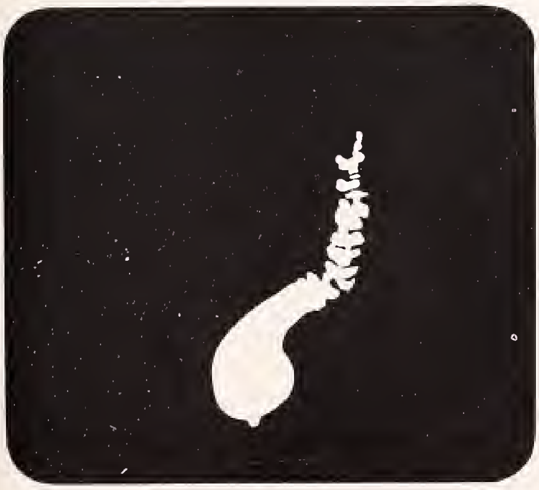
diphenoxylate hydrochloride (Warning: May be habit forming)	2.5 mg.
atropine sulfate	0.025 mg.

tablets • liquid

slows propulsion

relieves distress

stops diarrhea



Precautions: Lomotil is an exempt narcotic preparation of very low addictive potential: more than three million prescriptions have now been written for Lomotil. Recommended dosages should not be exceeded. Lomotil should be used with caution in patients with impaired liver function and in patients taking addicting drugs or barbiturates.

Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness and insomnia.

Dosage: For full therapeutic effect—Rx full therapeutic dosage. The recommended initial daily dosages, *given in divided doses,* until diarrhea is controlled, are:

Children:

3 to 6 months—3 mg. (½ tsp.* t.i.d.)
6 to 12 months—4 mg. (½ tsp. q.i.d.)
1 to 2 years—5 mg. (½ tsp. 5 times daily)
2 to 5 years—6 mg. (1 tsp. t.i.d.)
5 to 8 years—8 mg. (1 tsp. q.i.d.)
8 to 12 years—10 mg. (1 tsp. 5 times daily)

Adults:

20 mg. (2 tsp. 5 times daily or
2 tablets 4 times daily)

**Based on 4 cc. per teaspoonful.*

Maintenance dosage may be as low as one fourth the therapeutic dose.

Lomotil is a brand of diphenoxylate hydrochloride with atropine sulfate; the subtherapeutic amount of atropine is added to discourage deliberate overdosage.

SEARLE *Research in the Service of Medicine*

Burn Wound Infection—A Review

Marvin S. Arons, M.D., D.M.D.

Introduction

■ Over the past two decades, modern fluid resuscitation has decreased mortality and prolonged survival in the extensively burned. However, these recent advances in burn therapy have been reflected chiefly in prolongation of life and not in overall survival, for the major complication stalking the burned patient is septicemia.[1,2,3] It is doubtful if the incidence of burn sepsis is increasing, but rather that more infections are occurring because life has been prolonged between burn injury and death.[4] Septicemia is now the most serious complication in burns.[5]

The Burn Wound

Because of the nature of the wound, an ideal situation exists for infection in deep second degree and third degree burns. Beneath the dead tissue in the hair follicles, sweat glands, and sebaceous glands, are many viable bacteria with the abundant nutritive material of burned tissue. The normal defense mechanisms against bacterial proliferation are diminished due to locally altered physiology (edema, anoxia, catabolism, thrombosis, sludging, acidosis). In this regard, there appears to be an increased susceptibility or decreased resistance to bacteria in third degree burns which may be due to an impaired reticulo-endothelial system or deficient immunologic defense mechanisms.[1,6]

Origin of Infection

At one time, it was thought that full-thickness burns initially were sterile and that bacterial contamination occurred inadvertently during treatment. This is untrue since viable, proliferating bacteria exist in the deeper tissues, even under thick, intact eschar.[7]

It must always be remembered that the skin—the usual barrier against bacteria—has been eliminated in a burn wound. When a granulating burn wound is covered by a split-thickness skin graft, the bacterial flora in the wound drops precipitously.[8] Simply, this is why the prime goal of all burn treatment is the rapid closure of the burn wound.

Although such procedures as the insertion of an indwelling intravenous plastic catheter and insertion of a Foley catheter are essential for the burn patient, they are associated with a definite morbidity. In non-burned patients, for example, a 40 per cent incidence of bacterial contamination of indwelling catheters has been reported[9] and 77 per cent of gram negative septicemia have been ascribed to genito-urinary tract manipulation.[10]

In many hospitals, it is common practice to isolate all extensively burned patients. Although this appears ideal, there is no scientific evidence to support this theory.[11] The patient himself is a carrier of bacteria, and in one group of non-burned cases the patients were found to be the source of their own postoperative infection.[12] Even the mask is no fool-proof prevention[13] for the well-known route of airborne spread of infection.[14] Probably, it is more reasonable to employ reverse isolation techniques on burn patients—that is, to decrease the spread of infection to the non-burned. Presently, there is a trend toward conservatism in the use of tracheostomy in severe burns primarily because of the hazard of introducing antibiotic resistant organisms in the lower respiratory tract and also to reduce local mechanical irritation.[15] As important as is gradual progressive debridement of the extensive burn wound, it must be accomplished with utmost conservatism since every open vascular channel may become a portal of bacterial entry. Included in the routine admission orders for a burn patient should be a culture and sensitivity of the burn wound, urine, and from the tracheostomy site if present. In this way, baseline bacteriologic studies are available for early treatment planning against infection.

Local Infection

All the burn wounds have some degree of local infection and the aims of therapy are to keep this infection under control, decrease the concentration of micro-organisms, and prevent bacterial invasion and septicemia. Local infection has serious consequences in that it contributes eventually to the patient's discomfort, metabolic derangement, and length of time required for complete healing. Infection in partial thickness burn wounds and even

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donor sites may cause conversion of these areas into full-thickness or third degree loss by destroying the remaining viable epithelium. If the burn is of the deep dermal or deep second degree type, even minimal local infection may destroy the remaining viable regenerating tissue. All micro-organisms that commonly colonize burn wounds appear capable of causing separation and destruction of epithelium. In one bacteriologic study of burn wounds, the majority of cultures grew a mixed flora. Coagulase-positive Staphylococcus aureus was present in more than 50 per cent of the cultures and about 80 per cent of these organisms were resistant to penicillin. The gram-negative organisms—Pseudomonas and Proteus—were present in over 65 per cent of the wound cultures.[16]

Every effort should be made to prevent infection in burn wounds by appropriate local care and the use of prophylactic antibiotics. During the immediate post-burn period when the burn eschar is intact, invasive infection is unlikely except from beta-hemolytic streptococcus which is sensitive to penicillin. The use of routine antibiotics is debatable, but several experienced clinicians give penicillin during the first five days post-burn.[1, 17, 18] For adults, 600,000 units of procaine penicillin intramuscularly every 12 hours is sufficient. In small children, the dose is 300,000 units. The administration of a broad spectrum antibiotic during this period serves no useful purpose and is not recommended except for patients with penicillin sensitivity. Prophylaxis against tetanus during the early post-burn phase is essential. In patients previously immunized, tetanus toxoid intramuscularly is sufficient. In others, 5,000 units of tetanus antitoxin should be administered after proper sensitivity testing.[19] Human tetanus antitoxin (immune globulin) is probably even better.

Of greatest importance is the direct care of the burn wound itself. It has been found that there is less likelihood of invasion from a dry than a moist burn surface. For this reason, treatment of the burn patient by exposure rather than by occlusive dressings is excellent therapy when the involved areas can be properly positioned and protected from the macerating effects of contact with bed clothing.[20] In this regard, turning of the patient after the first 48 to 72 hours is essential. By control of the infection with exposure, there is a decrease incidence of converting second degree burns to third degree burns, fever is decreased, and the burn wound remains under direct observation and care.[21, 22]

Infection in Granulating Burn Wounds

All granulation tissue harbors micro-organisms but the granulating surface also protects against bacterial invasion into the deeper tissues and the blood stream.[1] As the burn eschar begins to separate (usually about the 12th post-burn day) the patient may develop increasing fever and leukocytosis and a search should be made for pulmonary complications, urinary tract infection, and the possibility of septicemia.[3] Further culture and sensitivity studies should be done and antibiotics can be given as directed at this time based on culture and sensitivity reports. It is realized that the burn wound flora changes rapidly but in the absence of positive blood cultures, the wound cultures are helpful in selecting antibiotics. During this phase, when the burn eschar is softening and separating and granulations are beginning to form, most patients will show some degree of temperature but this, in itself, is no indication for antibiotics.[3, 17] It is the overall clinical course of the burn patient which must be totally accessed by the physician as well as the problem of recovering resistant pathogens from the burn wound.

The antibiotics commonly employed for the adult patient during this period of his burn and based on culture and sensitivity reports have included: tetracycline, Declomycin, Prostaphlin, streptomycin, Chloromycetin and erythromycin. The general use of these antibiotics has recently been reviewed.[23]

Reliance on antibiotics can never replace the local care of the burn wound. The burn wound should be kept clean by bringing the patient to the operating room for the first time early in the second week after injury and thereafter at two to four day intervals for conservative water-spray debridement (Fig. 1) under analgesia and trimming away those portions of loose burn eschar which have spontaneously separated.[21] No burn area is ever left exposed without an intact eschar or without some type of dressing. The latter is achieved by applying one layer of Furacin or glycerin impregnated fine mesh gauze to all denuded areas. This prevents drying and degeneration of the newly forming granulation tissue.

The local application of all topical agents such as antibiotics, enzymatic debriding agents, and analgesics has proved to be of such limited value that their use is not recommended at the present time.[24] Research is presently being conducted at several burn centers to find effective topical antimicrobial agents for use on burn wounds such as Sulfamyalon.[25] As for the use of convalescent burn serum, it has been concluded in this country that the so-called burn toxemia is probably related to infection, electrolyte imbalance, and the like; that if a burn toxin does exist, it represents a morbid rather than a lethal factor, and that use of any burn serum has no immunologic benefit.[24] The administration of gamma globulin has produced equivocal results.[27]

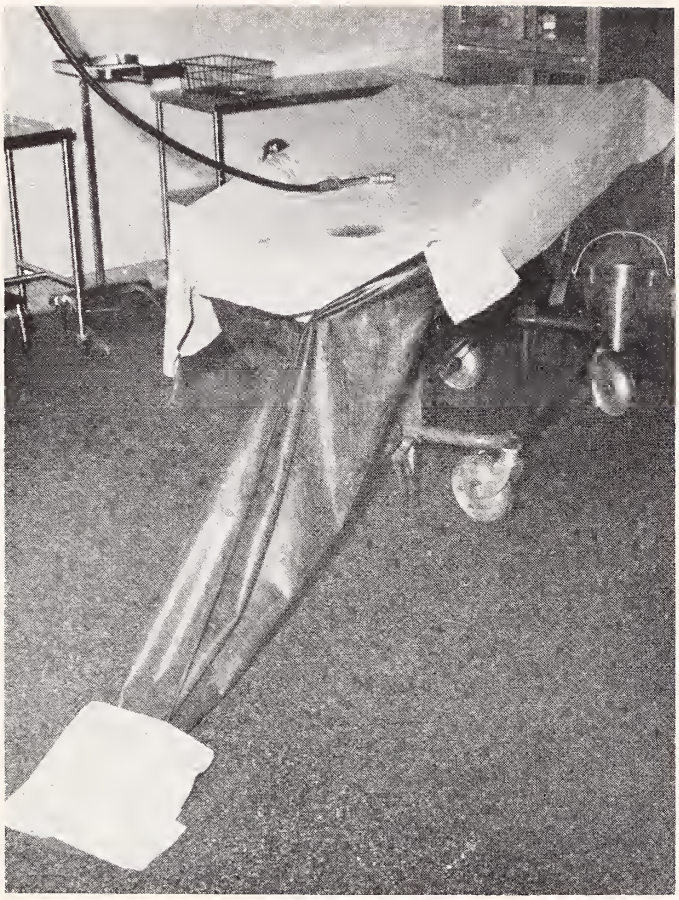

FIGURE I

A modified operating room transportation cart and an overhead tap water hose with nozzel are used for washing burn patient.

Septicemia

Septicemia is now the most serious burn complication, accounting for at least half the deaths in major burn centers. It is still debatable whether it results directly from invasive bacterial wound infection, from the urinary tract, from the gastrointestinal tract, or elsewhere. It occurs most frequently in patients with extensive full-thickness burns and is rarely a complication of partial thickness burns. The depth and extent of surface burn are important factors affecting not only the incidence of septicemia but also the prognosis. The larger and deeper the burn the less chance of survival. An extent of a burn above 50 per cent is still the greatest problem especially when age and/or obesity are concomitant factors.

The onset of septicemia is usually during the autolytic stage (10-25 days post burn) when the eschar is beginning to crack, soften, macerate, and separate at the flexion creases and at the periphery of the eschar. During the immediate post burn period while the eschar is intact, invasive wound infection is unlikely. After a good granulating surface has formed on the burn wound, septicemia rarely occurs.

Diagnosis—A definite diagnosis of septicemia cannot be made without positive blood cultures and multiple blood cultures taken aseptically become absolutely essential for diagnosis and selective antibiotic therapy.[26] In many instances however, septicemia can be anticipated or clinically diagnosed and early, vigorous treatment must not wait for a positive blood culture report. It is also true that not every burn patient with a positive blood culture has septicemia. The diagnosis of septicemia is made by finding a positive blood culture associated with the clinical features of the disease. It is the gram-negative septicemia that almost uniformly pursues a terminal course in the burned patient.[2] Classically, it is characterized by the initial signs of: (1) hypothermia (92° to 96° F.) and (2) paralytic ileus. Then (3) leukopenia and (4) disorientation are noted, followed by (5) hypotension, (6) often anemia and (7) oliguria proceeding to (8) anuria and death. During this period, which may last from one to four days before death, the granulation tissue on the burn wound is of poor quality and areas of actual necrosis may be noted.

The gram-positive septicemia in the burn patient, which is invariably due to staphylococcus aureus, follows a more traditionally recognized pattern. This consists of: (1) hyperpyrexia (2) leukocytosis, (3) paralytic ileus, (4) disorientation and (5) tachycardia. Late manifestations are (6) hypotension and (7) oliguria. The mortality from gram-negative septicemia is higher than that from gram-positive septicemia (and this may reflect less adequate antibiotic therapy available for this type of endotoxic or septic shock).

Treatment—Ideally, therapy for septicemia and septic shock should commence as soon as clinical suspicion is aroused and before the full-blown pattern becomes manifest. Although new ideas in the treatment of endotoxic shock or irreversible shock have been introduced recently, only the more usual methods of therapy will be presented for purposes of this brief review.[26] These new therapeutic modes include the use of : (1) low molecular weight dextran—an anti-sludging agent, (2) dibenzyline—an adrenergic blocking agent, (3) aldosterone, (4) cortisone and (5) hyperbaric oxygenation.

In burn patients suspected of having gram-negative septicemia, Colymycin and Chloromycetin are given in adequate dosage. Then, depending upon the blood culture reports, Kantrex or Aerosporin may be added or substituted. All of these drugs have various toxic effects with which the physician should become familiar but which should not deter him from early vigorous antibiotic treatment for a disease with an extremely high mortality rate in the burned victim. Of course, tetracycline and streptomycin are also selected as part of the drug armementarium and are selected on the basis of the culture and sensitivity reports. Should the blood cultures be reported as negative in a case with the positive clinical picture of septicemia, then the treatment remains unchanged and more blood cultures are obtained periodically. In such cases, antibiotics are selected on the basis of the wound and/or urine cultures.

Other supportive cases includes the use of anti-hypotensive agents — Aramine and Hypertensin. Whole blood must be administered to restore the circulating blood volume and to combat the anemia. Ringer's lactate solution is administered as the electrolyte to combat metabolic acidosis. If renal shutdown supervenes, it is understatement to say that treatment planning becomes complex. Fluid therapy and blood administration must be diminished, a rising serum potassium must be corrected by restricting intake and giving an ion-exchange resin such as Kayexlate. The latter preparation can be given via a gastric tube which so often is required to combat paralytic ileus. As in following a burn patient during the acute phase, the insertion of a Foley catheter is most helpful during this septic stage. Gamma globulin may also be given.

If a gram-positive staphylococcal septicemia is anticipated or proven, the advent of the newer penicillin has relieved this problem tremendously. When the organisms are resistant to penicillin (aqueous-procaine), Prostaphlin or Keflin are administered. The other usual supportive type care is also instituted. Whether treating gram-positive or gram-negative septicemia in the burned patient, antibiotic therapy must be prompt, vigorous and sustained for life-saving effect.

Antibiotics During The Grafting Phase

Just prior to grafting the burn wound, the granulation tissue is not prepared in any special way. It is thoroughly and gently washed with tap water and Phisohex, irrigated, and blotted dry. The thinner the split-thickness skin graft, the more increase in its take and the more re-epithelization of donor sites for further grafts. Large strips of skin grafts are laid on the granulating areas and sutures and dressings are avoided if possible. (Fig. 2) . This allows for direct observation and for surgical spontaneous drainage of pus, blood, or serum from beneath the grafts. Combined with the fact that the application of the graft decreases bacterial contamination on the granulating wound, this method of grafting and care is the preferred treatment. The secondary therapy consists of the simultaneous administration of systemic antibiotics to further suppress or help eradicate the wound bacteria and aid in the take and survival of the skin grafts.

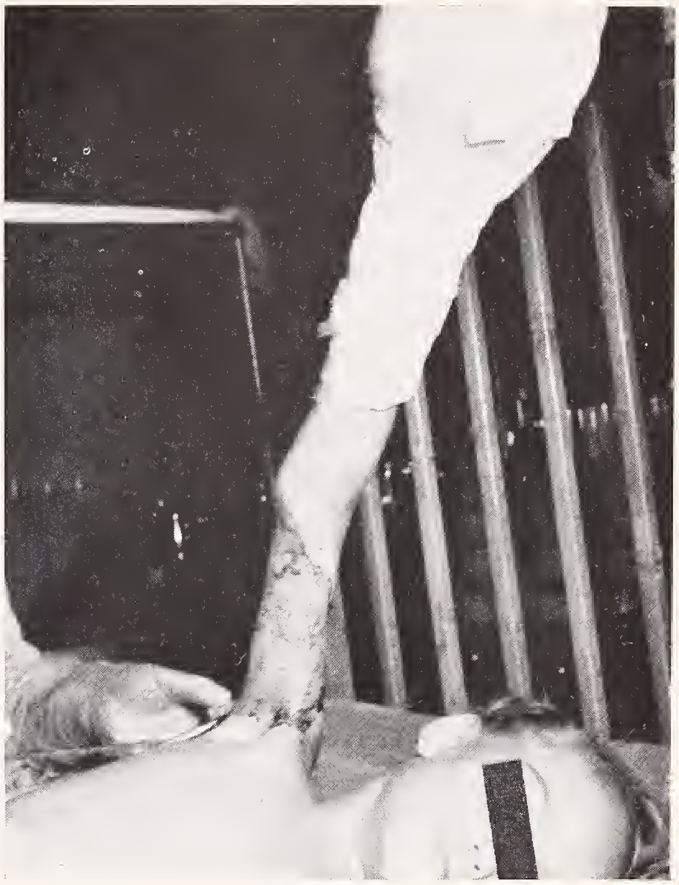

FIGURE II

Complete exposure of skin grafts on a circumferential burn of the upper arm.

Conclusions

All third degree burn wounds become infected. There is a direct relation between extent of burn, degree of infection, and rate of survival. The chief aim of burn care is the progressive and conservative removal of the burned tissue and the early closure of the wound with skin grafts. Septicemia is the most common cause of death in burns, the most prevalent offending organisms being Staphylococcus aureus, Pseudomonas, and Proteus, and requires the greatest need of research today in managing problems in the burned patient.

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"I have had three personal ideals. One is to do the day's work well and not bother about tomorrow. It has been urged that this is not a satisfactory ideal. It is; and there is not one which the student can carry with him into practice with greater effect. To it, more than to anything else, I owe whatever success I have had—to this power of settling down to the day's work and trying to do it to the best of one's ability, and letting the future take care of itself. The second ideal has been to act the Golden Rule, as far as in me lay, towards my professional brethren and towards the patients committed to my care. And the third has been to cultivate such a measure of equanimity as would enable me to bear success with humility, the affection of my friends without pride, and to be ready when the day of sorrow and grief came—to meet it with the courage befitting a man.

"I have made mistakes, but they have been mistakes of the head; not of the heart. I can truly say, and I take upon myself to witness, that in my sojourn among you:

"I have loved no darkness
Sophisticated no truth,
Nursed no delusion,
Allowed no fear."

—Sir William Osler, May 2, 1905

Management Of Shoulder Injuries in Sport

Edward J. Coughlin, Jr., M.D. and Dudley M. Baker, M.D.

■ In 1960 Patton of Ohio State University said that in a review of football injuries at that University, approximately one out of ten football injuries involved the shoulder girdle. He further stated that "more than half of these cause some degree of disability." In reviewing our injuries at Williams College over the past ten years, this has not been borne out since we have a much lower incidence of shoulder injuries in football. This may be due in part to preseason conditioning and also in part due to the attention we have paid recently to proper fitting of shoulder gear. Of our shoulder injuries, the vast majority have been minor shoulder contusions or sprains, with a very small number of actual injuries resulting in any prolonged period of disability. The fact that this is due at least in part to proper conditioning and proper attention to shoulder padding, is borne out by the rather high incidence we have of shoulder injuries in unorganized sport. During the 1964 football season, we had noglenohumeral dislocations in either the freshman or varsity football squad. During the same period of time, we had four shoulder dislocations in "touch football." In addition, one of our Associates, who sees a large volume of skiing injuries throughout the winter season, stated that he sees the entire gamut of shoulder injuries, from fractures to the clavicle to acromioclavicular dislocation, glenohumeral dislocations, fractures of the surgical neck of the humerus and avulsion fractures of the greater tuberosity, as well as fracture-dislocations of the shoulder. Obviously in skiing, there is very little attention paid to conditioning and no attention paid to proper protection of the shoulder in indulging in this sport.

While not exactly within the confines of shoulder injuries, a word should perhaps be mentioned of the lateral flexion injury of the cervical spine or the so-called "pinched nerve syndrome," so aptly described by Chrisman and Snook. We have also seen our share of these, but in the past year or two have not had too many of them. We would certainly agree that body habitus plays a role in this type of injury. I would also feel that improper shoulder padding may be a contributing factor. It is worthwhile noting that in the 1964 football season, we had only one case of the pinched nerve syndrome and this was in a prima donna who insisted on wearing the professional low shoulder pad rather than the conventional "Big Boy."

A. MUSCULOTENDINOUS INJURIES OF THE SHOULDER GIRDLE

1. Contusions and minor strains of musculotendinous structures around the shoulder girdle are encountered and are usually of such a relatively minor nature that they do not require any significant period of disability. On rare occasions we have seen major musculotendinous injuries which have required some period of disability .

2. TEAR OF THE PECTORALIS MAJOR MUSCLES:

This relatively rare condition has been encountered twice in the past ten years, both in wrestlers. The exact mechanism was never quite sure in either of these young men, but presumably was due to a fall on the outstretched hand in a "take down." One of these was relatively minor and aside from some swelling and ecchymosis, subsided over a period of a week or two. The second one presented a rather large soft tissue mass which was first seen about a week or ten days after the injury and was rather alarming. Actually this required biopsy to rule out any tumor but the biopsy report was a simple hematoma. Again, recovery was uneventful. It is interesting to note that in the past two weeks we have seen a similar incomplete rupture of the pectoralis major in a member of the coaching staff at Williams who slipped on the ice and fell, widely abducting his shoulder in attempting to grasp at an object in falling, Again, this subsided uneventfully.

3. TEARS OF THE MUSCULOTENDINOUS ROTATOR CUFF:

This condition has been encountered only rarely and, when seen, was of a relatively minor nature requiring only a very short period of disability, contrasted with the rather severe period of disability sometimes associated with the older age group in general orthopedic practice. We have not had any

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occasion to explore a tear of the rotator cuff in a young athlete. Treatment of minor cuff tears has been purely symptomatic and the student has been allowed to resume active sports as soon as his symptoms have subsided.

4. Dislocation of the Biceps Tendon and Bicipital Tendinitis:

Bicipital tendinitis is not an uncommon injury, usually seen in the young baseball player who first goes out without any adequate warm-up and develops a painful arm. With proper rest and protection, this condition rapidly subsides. We have seen one rather unusual case of chronic dislocation of the biceps tendon, which at operation revealed that the biceps tendon had been completely torn loose from the groove and subluxed medially on abduction and external rotation of the arm. This was repaired by a modified type of Nicola procedure and a long term follow up on this young man has shown that he has had no subsequent difficulty.

5. "Pitchers Shoulder"

This relatively uncommon but severely disabling condition has been infrequent in our experience. However, we have had one or two cases which clinically strongly suggested the condition so aptly described by Dr. Bennett of Johns Hopkins, as well as by Dively and Meyers. Our cases have shown characteristic physical findings of pain and tenderness in the posterior axilla but we have unfortunately not been able to demonstrate the calcification of the glenoid rim that has been described by both of them. Treatment of this condition has been rather unsatisfactory and in most cases the player has had to either abstain from pitching or radically modify his pitching form.

B. Fractures of the Shoulder Girdle

Fractures of the shoulder girdle in our experience have been extremely rare.

1. Clavicle:

In the past five years we have seen only three cases of fracture involving the middle third of the clavicle in the student population. One of these was incurred by a varsity football player who was practising in a sweat suit and fell, landing on the tip of his shoulder. The second was in a skier who at the time of injury was merely a spectator and slipped on the ice and fell. The third was from that group of athletes which constitute our readiest source of injuries, namely, touch football. We have never seen a fracture of the clavicle in a young individual that we felt required operative intervention. These can all be treated by simple methods either of a plaster paris figure of 8 or one of the commercial figure of 8 dressings. Disability is relatively brief, the period of immobilization being about three weeks. However, we have felt very definitely that these boys should not return to any type of contact sport for a minimum of twelve weeks following injury.

2. Epiphyseal Separation:

While a certain number of the boys encountered in the student population undoubtedly have open epiphyses of the proximal humerus while they are students at college, we have not seen a clear cut case of epiphyseal separation of the proximal humerus. We feel, however, that if this situation were encountered that probably conservative management would yield the best results unless the separation was complete and in that event, that operative intervention might conceivably be indicated.

3. Fracture of the Surgical Neck:

Again this condition must be relatively rare in the young student body since we have not encountered it in ten years of practice with them.

A. Fractures of the Greater Tuberosity:

While this fracture is seen relatively commonly in general orthopedic practice, it has been extremely rare, and as a matter of fact, non-existent, in our own personal experience in handling the younger age group of the college level. Again we would feel that if this condition were encountered with no significant displacement, that it would be treated extremely conservatively. If there were wide separation of the greater tuberosity in the usual position posteriorly and superiorly, we would have no hesitation about recommending operation with internal fixation of the detached fragment.

C. Dislocations

1. Sternoclavicular Dislocations:

Complete dislocation of the sternoclavicular joint, particularly when it is a retrosternal dislocation, can constitute a real orthopedic emergency, because of resipartory embarrassment. Fortunately we have not to date seen a complete restrosternal sternoclavicular dislocation in the student body, but have encountered two of these in private practice. Treatment as mentioned above is an orthopedic emergency and immediate reduction can usually be accomplished by firm hyperextension of the shoulder girdle with an audible and palpable reduction of the dislocation. Incomplete dislocations or "sprains" of the sternoclavicular joint are somewhat more common. We have seen these on several occasions in the student body, usually the result of a direct blow on the shoulder with the force being transmitted through the shoulder girdle and clavicle to the sternoclavicular joint. In the few occasions that these have been seen, treatment has been expectant and conservative and aside from slight prominence at the sternoclavicular point, no disability is to be anticipated. Two of the three cases encountered in the past few years have been in hockey players who have struck the boards with the lateral aspect of the sholder.

2. Acromioclavicular Dislocations:

a. Incomplete:

Incomplete dislocations or "sprains" of the acromioclavicular joint are probably the most common shoulder girdle injury which we encounter. The minor type of this is the so-called "shoulder pointer" of the football trainer. These are evidenced by marked tenderness directly over the acromioclavicular joint with or without some localized swelling, but not associated with any deformity and not associated with any tenderness over the coracoclavicular ligament. Occasionally the separation may be slightly more complete and there may be some upward displacement of the acromion at the acromioclavicular joint. X-Rays are taken routinely in the erect position with weight held in the dependent hand and X-Rays of the opposite shoulder are taken for comparison. Measurement of the interval between the superior aspect of the coracoid and the inferior aspect of the clavicle gives one an estimate of the amount of upward displacement of the clavicle and an indication of any tear of the coraco-clavicular ligament. The vast majority of these injuries are of a minor nature if there is only localized tenderness with very little swelling. Heat and protection for a few days followed by an adequate protection pad during contact sport is all that is necessary. In the minor subluxations of this joint, protection with a sling for a period of two to three weeks, followed by gradual increasing motion, is all that is necessary. Some of these boys may be left with some prominence at the acromioclavicular joint, but in the vast majority of cases, this does not constitute any permanent disability. Management of the rare case where difficulty is present following a chronic subluxation of the acromioclavicular joint will be discussed later on.

b. Complete:

X-Rays taken in the erect position will reveal marked upward displacement with marked widening of the interval between the clavicle and the coracoid process. It must be emphasized that both physical examination and the X-Ray must be carried out with the patient erect since these complete dislocations will readily reduce themselves in the supine position and one may be lulled by a false sense of security. Clinically these boys show a marked upward displacement of the outer end of the clavicle with marked tenderness over the acromioclavicular joint and marked tenderness over the coracoid process. After a relatively short period of time, there is soft tissue swelling beneath the clavicle in the region of the coracoclavicular ligament and at a later date, definite ecchymosis is seen in this area. Management of these complete acromioclavicular separations can best be divided into two categories:"

1. Conservative management:

In many individuals conservative management is all that is necessary in the complete acromioclavicular separation. This can be accomplished in various ways with a Stimson dressing or some other form of taping. The Stimson dressing itself is rather uncomfortable and is not well tolerated, but if properly applied, gives satisfactory reduction and if maintained for a period of three to four weeks, gives an excellent long term result. In 1959 Stubbins and McGaw described a "suspension cast." We have tried this on two occasions and have felt that it is not only unsatisfactory, but also is not at all well tolerated by the patient. Perhaps in the older age group this management would be adequate but we do not feel that it is in the younger athlete of which we are talking.

2. Operative Treatment:

a. Repair of the acromioclavicular and coracoclavicular ligaments.

Bunnell and others have described operative repair of not only the acromioclavicular ligaments, but also of the conoid and trapezoid ligaments. This is a physiologically sound operative procedure using fascia lata or some other living structure for repair, but it is an operation of the first magnitude and we feel that it is probably not necessary in the vast majority of cases. We have seen several cases where this elaborate operation has been carried out with resultant calcification of the conoid and trapezoid replacements resulting in a more or less fixed clavicle and a painful shoulder.

b. Fixation of the clavicle to the coracoid:

Various operative procedures have been described to fix the clavicle to the coracoid. Any unyielding fixation is fraught with danger and we have seen cases where fixation with a wire loop over the clavicle and under the coracoid has resulted in cutting through the wire and secondary fracture of the clavicle. Bosworth described an ingenious screw to fix the clavicle to the coracoid and yet permit motion of the clavicle on its long axis, as well as its perpendicular axis. We have had no occasion to use this procedure and think that it is probably not indicated in the vast majority of acromioclavicular separations.

c. Wire fixation of the acromioclavicular joint:

Various methods of transfixion of the acromioclavicular joint by one or more intramedullary type of wires has been carried out by the authors. These will give some form of fixation of the acromion to the clavicle but in our experience, after removal of the wires, some degree of subluxation has invariably recurred. Complete fixation of this joint is not only difficult, but is probably not desirable even for a relatively short period of time. In addition, the method is not without its inherent risks and we personally know of one case of migration of the wire into the superior triangle of the neck with subsequent perforation of the great vessels.

d. Resection of the outer clavicle:

This relatively simple procedure consisting of resection of the outer ¾ inch of the clavicle, with or without repair of the conoid and trapezoid ligaments, has been carried out for not only chronic but also for acute acromioclavicular dislocations. To date we have been very pleased with the result and have found little or no long term disability. One of our most satisfactory cases was a hockey player who sustained a complete acromioclavicular dislocation which was treated by resection of the outer ¾ inch of the clavicle without repair of the coracoclavicular ligament. This boy was also captain of the tennis team and went on for two successive seasons playing tennis with full range of motion of his right shoulder which was his dominant hand.

c. Chronic:

Even the apparently minor subluxation of the acromioclavicular joint may develop severe symptoms, particularly with abduction of the arm to 90 degrees. We have seen several cases of this in the younger age group which have eventually required operative intervention with resection of the outer portion of the clavicle. We do not feel that secondary repair of the acromioclavicular and coracoclavicular ligaments is of any value in this chronic condition, but do feel that resection of the outer ¾ inch of the clavicle gives excellent results. Luck has described what he calls "arthrofibrosis" involving the acromioclavicular joint. This, we feel, is probably a manifestation of the chronic degenerative form of arthritis which characteristically shows cystic changes in the opposing ends of the acromion and of the clavicle with longitudinal striations in the bone. Arthroplasty of the acromioclavicular joint in the form of simple resection of the outer ¾ inch of the clavicle gives extremely gratifying results.

3. GLENOHUMERAL DISLOCATIONS.

a. Acute:

Acute dislocations of the glenohumeral joint are probably among the most common encountered. Fortunately these are not of great frequency in the conditioned athlete who is properly protected and an acute glenohumeral dislocation is a relatively rare experience in the trained football player in our experience. X-Rays are mandatory prior to reduction because of the ever present possibility of an associated fracture with the concomitant medicolegal complications. Reduction of the acute primary glenohumeral dislocation can almost always be accomplished by simple traction, with or without local injection of the glenohumeral joint with Xylocaine and Hyaluronadaise. It has been only in the extremely rare condition that we have had to resort to general inhalation anesthesia. Traction alone is usually adequate to effect complete reduction of the dislocation and in rare conditions, a Kocher type of manipulation may be indicated. If one elects to use the so-called Hippocratic method of dislocation, great care must be taken not to place the heel in the axilla itself, but rather on the lateral chest wall. Immobilization following reduction of a primary dislocation must be complete and must be adequate as emphasized and reemphasized by Watson-Jones. All too frequently we have seen a glenohumeral dislocation which has been well reduced but which has been inadequately or insufficiently immobilized and has developed into a chronic recurrent dislocation. One high school student stands out in mind. This boy sustained a primary dislocation of his shoulder while engaged in the first half of a football game. The dislocation was reduced by the coach and the boy spent the remainedr of the first half sitting on the bench. At the interval between the first and second halves, they retired ot the Gym. where the boy felt faint and fell to the floor, redislocating his shoulder. Again the shoulder was reduced by his coach and in the second half the boy was allowed to resume his football. Within 30 seconds the shoulder had re-dislocated for the third time in a period of 30 minutes. This boy obviously came eventually to operative repair. A well applied sling and swathe which immobilizes not only the humerus to the thorax but also immobilizes the forearm to the thorax to prevent external rotation of the arm, give adequate immobilization providing it is continued, again for a period of three weeks.

b. Recurrent:

Recurrent glenohumeral dislocations are probably the most common major shoulder injury which we encounter in the college athlete. Many of these boys have had a primary dislocation without adequate immobilization for the prescribed three weeks. Others, because of developmental or some other underlying pathological cause, have developed chronic or recurrent dislocations. Frequently it is the duty of the team physician to decide whether or not these boys can participate in contact sports. It is our feeling that if the shoulder is adequately protected and if the boy is not an end or a quarterback with the dislocation involving the dominant arm, that these boys can participate in contact sports. We have been in the habit of using some sort of a check rein prophylactically, but have yet to see the check rein which will give complete and adequate security against a subsequent dislocation. If dislocations become habitual in spite of some form of check-rein, then this boy is not permitted to continue in contact sports. Reduction of the recurrent dislocated shoulder very rarely requires anaesthesia and can usually be accomplished by simple traction by the patient himself lying prone on the table with the arm and forearm hanging over the side of the table with weights attached to the affected arm. Immobilization does not require the prolonged period of an acute dislocation and is usually continued only until soft tissue trauma has subsided and symptoms are negligible. Decision as to definitive treatment in this particular age group and population obviously depends upon the parents of the student. Because of the academic requirements, it is only in the rare occasion that definitive treatment is carried out during the school curriculum. Operative repair of the recurrent or habitual dislocations of the shoulder can be carried out by any one of the conventional methods, the Bankhart or Putti-Platt, or Magnuson type of procedure yielding the best results. Again, as in the acute dislocation, immobilization should be complete and adequate for a minimum of three weeks with additional protection for another three weeks to insure adequate healing of the transplant.

Conclusion

As mentioned at the onset, while minor contusions, sprains and musculotendinous injuries are of fairly frequent occurrence in the college athlete, severe injuries involving the shoulder girdle are relatively infrequent. This is probably due in part to proper preconditioning and also in part to adequate protective mechanism for the student involved in contact sport. Proper treatment of the injured shoulder consists of rest, protection of the part, physical therapy in the form of the most basic of the physical therapy modalities, followed by a program of careful rehabilitation and reconditioning. Adequate protection against re-injury is imperative in all college athletes who are going to resume any type of contact sport.

Amyl Nitrite And Angina Pectoris

Few things are more distressing to a physician than to stand beside a suffering patient who is anxiously looking to him for that relief from pain which he feels himself utterly unable to afford. His sympathy for the sufferer, and the regret he feels for the impotence of his art, engrave the picture indelibly on his mind, and serve as a constant and urgent stimulus in his search after the causes of the pain, and the means by which it may be alleviated.

Perhaps there is no class of cases in which such occurrences as this take place so frequently as in some kinds of cardiac disease, in which angina pectoris forms at once the most prominent and the most painful and distressing symptom. This painful affection is defined by Dr. Walshe as a paroxysmal neurosis, in which the heart is essentially concerned, and the cases included in this definition may be divided into two classes.

In the first and most typical there is severe pain in the precordial region, often shooting up the neck and down the arms, accompanied by dyspnoea and a most distressing sense of impending dissolution. The occurrence and departure of the attack are both equally sudden, and its duration is only a few minutes.

In the second class, which from its greater frequency is probably the more important, though the pain and dyspnoea may both be very great, the occurrence of the attack is sometimes gradual, and its departure generally so; its duration is from a few minutes to an hour and a half or more, and the sense of impending dissolution is less marked or altogether absent.—T. L. Brunton. 'Use of Nitrite of Amyl in Angina Pectoris." *The Lancet,* 2: 97, 1867.

Bell's Palsy, A Modern Concept of Treatment

Timothy L. Curran, M.D.

■ The clinical entity which we have come to know as Bell's palsy has been recognized since first described by Sir Charles Bell.[1] In 1829. In the light of present day knowledge, our concept of this disease has changed so that Bell's palsy is now considered by many to be an emergency.[2] Whether we should consider it a surgical or medical emergency will be determined by the history and the findings, but most important will be the thinking of the physician who first examines the patient. The individual with Bell's palsy is likely to be seen by any one or several different practitioners or specialists. The family doctors and the internists undoubtedly see the larger number of cases, but frequently the patient is referred to the neurologist or neurosurgeon and occasionally he will be seen by the otologist. Since the acceptable form of therapy is some type of medical management, these patients will generally be controlled by the physician who first sees them and the usual treatment of vitamin B, steroids or physiotherapy or a combination of these treatments will be instituted. The type of therapy which employs surgery is usually not understood by the practitioner and frequently the use of surgical decompression is completely unknown to him. When surgery is suggested for the treatment of Bell's palsy, an expression of disbelief or raised eyebrows is encountered. The reason for this reaction partially stems from the belief that all Bell's palsy patients recover, and therefore surgery is never indicated.

It is not generally recognized that 15-20 per cent of these patients do not recover their function.[3] We must, therefore, be concerned not with the 80-85 per cent of patients who will recover function either spontaneously or by some form of medical management, but we must be made aware of the fact that the percentage of patients who do not recover function will be left with a profoundly depressing effect on their psyche. The patient, with loss of function of the facial nerve and the muscles it innervates, is unable to communicate by facial emotional expression. He cannot demonstrate speech and he cannot illustrate mood. His paralyzed side always shows the same blank stare. He cannot whistle, close his eye or wrinkle his forehead. He is indeed a pitiful sight. Yet for many years these patients have been treated with the expectation that they would all recover and the 15-20 per cent who do not recover are unknowingly neglected.

Pathology

A knowledge of the pathology involved might help us to understand why these patients do not all recover and why some form of therapy other than the generally accepted medical treatment should be considered in order to improve our statistics of recovered patients. The original description of Bell included cases of a bullet wound and a tumor of the ear. We now apply the term only to cases of idiopathic origin. The changes in the facial nerve are manifested by marked edema with the trunk tightly constricted by its nerve sheath at its point of issuance from the stylomastoid foramen. According to Hilger,[4] an ischemia occurs which interrupts the conduction of the nerve fibers and by attendant changes in the local circulation, the edema is produced. The mechanism appears to be an arteriolar constriction followed by capillary dilatation with resulant transudation. The impetus to arteriolar constriction is derived from the autonomic nervous stimulation to the involved vessel. This theory of causation appears more plausible when one notes the high percentage of Bell's palsy in patients with a history of chronic vasomotor rhinitis, vasodilating pain and vasomotor labyrinthitis. The end result of ichemia, edema and compression is necrosis and fibrosis. The muscles involved show contractures, associated movements and brief hemifacial spasms as well as persistent paresis.

Diagnostic Testing

A normal motor nerve responds to both faradic and galvanic stimulation. In cases of mild facial nerve damage, the response of the facial nerve itself is decreased to both types of current. Facial nerve damage is considered mild and reversible as long as there is faradic response. In severe nerve damage there is rapid loss of galvanic and faradic response from the nerve itself in three to four days. The complete loss of faradic response may take several weeks. The muscle response to faradic stimulation also disappears, but galvanic stimulation causes muscle response to increase. The loss of muscle and nerve response to faradic stmulation with retained or increased muscle response to galvanic stimulation is termed "the reaction of degeneration." The use

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of electromyography has been added to the testing of the facial nerve and muscle response as an aid in ascertaining the prognosis of the facial palsy. The importance of this diagnostic aid is that it may precede a recovery of a faradic response and this indicates a favorable prognosis weeks before detectable movement of the face. The difficulty with electromyography is the interpretation, which limits its usage. According to Laumans and Jongkees[5] it is possible, by electromyography, to select individual patients with an unfavorable prognosis, but not until the tenth to the fourteenth day after the onset of the paralysis. It is their feeling that by this time complete recovery with any means cannot be accomplished. However, if suitable measures are taken at this time, then it is still possible to protect a number of nerve fibers from degeneration.

A Differential Diagnosis

The causes of facial paralysis can be divided into: (1) intra-temporal bone lesions, (2) extra-temporal bone lesions, (3) supra-nuclear lesions, (4) nuclear lesions.

(1) Intra-temporal bone lesions include trauma, mastoiditis, cholesteatoma, Bell's palsy, epidermoid tumors, and glomus juglaris tumors.

(2) Extra-temporal facial paralysis occurs from trauma and parotid neoplasms.

(3) Supra-nuclear lesions may be cerebral vascular accidents and mass lesions of the brain.

(4) Nuclear lesions are seen in pontine gliomas and traumas.

Although the diagnosis of Bell's palsy is usually easy to make, the above differential diagnosis must be considered and investigations carried out if, and when indicated. Neurological, neurosurgical and otological consultations may be required where the history and findings warrant it.

Diagnosis

The abrupt occurrence of a flaccid facial paralysis with no history of trauma or ear disease usually indicates that this apparently healthy individual now has Bell's palsy. Pain is not an uncommon symptom in the first forty-eight hours. There is no sex predilection and the patient is usually, but not always, in the adult age group. There is a definite familial incidence. There appears to be no seasonal incidence and although patients frequently state that their symptoms began after exposure to drafts, this relationship is not well documented. It is not unusual, however, to find that the patient had a severe emotional upset prior to the onset of the palsy. This type of autonomic nervous disturbance is understandable when one considers the high percentage of Bell's palsy in patients with other vasomotor disturbances such as rhinitis and labyrinthitis.

The use of electrical testing should be included in the diagnostic work-up of testing patients. Chronaxie time determinations and electromyography are the most commonly accepted methods of electrical testing now in use.

Treatment

The restoration of circulation in the involved segment of the facial nerve must be the most important consideration in the treatment of this disease. Here we have many modalities, including various vasodilating drugs, such as nicotinic acid and steroids, to reduce the edema as well as stellate ganglion block. Vitamin B has been an old standby for many years and invariably has been recommended in treatment, although the rationale of this therapy is not too clear. Physiotherapy is employed primarily to maintain the tone of the affected muscles until the return of the nerve function. Every individual or group of individuals have their own favorite method of treatment which they feel offers the best chance of recovery. Surgical decompression is not an entirely new approach to the treatment of Bell's palsy, but with the expanded use of the operating microscope and the knowledge of the permanent paralyses that do occur in 15-20 per cent of these cases there has been a greater interest in the use of surgery. Since the medical treatment of Bell's palsy is well-known and generally widely accepted by most physicians, no attempt will be made to go into detail regarding this type of treatment. However, since surgical decompression is not too well recognized or understood, a more detailed explanation of this modality will be given. First it must be pointed out that this thinking in many cases is the lack of knowledge that many of these patients do *not* recover from the effects of the paralysis.

Surgical Decompression

It has been previously stated that at the time of surgery the edema of the facial nerve is usually confined to the area just above the stylomastoid foramen. In discussing the manner in which Bell's palsy occurs it has been pointed out that the constricted area of the foramen helps to set up the edema, the transudation and the ischemia which occurs. The solid fallopian canal, which does not allow for expansion of the edematous nerve, tends to precipitate compression and axon degeneration which frequently follows. Approach to this area, (which can be accomplished without danger), would certainly be preferable to leaving the compressed nerve untreated and eventually allow for possible necrosis and fibrosis of the nerve. It is essential that this decompression be performed with the proper instrumentation. The most important consideration is the ability to visualize the nerve and, as stated before, this can be accomplished most successfully by the use of the operating microscope. In addition to the microscope, the use of microscopic instruments is essential and should also include the use of the diamond burrs. These burrs allow for the exposure of the nerve without grasping or injuring the nerve tissue.

The surgical approach to the facial nerve is accomplished by an endaural or a post-auricular incision. The post-auricular incision probably allows for better access to the involved area. The periosteum is elevated and the mastoid cortex opened. The mastoid cells are exenterated in a manner similar to a simple mastoidectomy. The landmarks for the vertical segment of a facial nerve are the poserior tip of the incus above and the anterior end of the digastric ridge below. The digastric ridge is found and followed anteriorly to the posterior rim of the stylomastoid foramen. The bone of the foramen posterior-laterally and the vertical portion of the fallopian canal is shaved down to paper thinness with a burr. When the greyish-pink color of the fallopian canal is seen shining through thinned bone, the diamond burr is used to remove the rest of the bony covering of the facial canal. By the use of the diamond burr and the operating microscope, used at 6X magnification, the identity of nerve tissue is readily obtained and additional trauma to an already damaged nerve is avoided. By the use of a small curet the facial nerve is entirely uncovered. Complete decompression of the facial nerve is not accomplished until the sheath of the nerve has been slit with a cataract knife from the stylomastoid foramen to the level of the horizontal semi-circular canal. This procedure is best done under 16X magnification. Following this the wound is cleaned of any bony fragments and the incision is closed without drainage.

Case History

This is a twenty-six year old male seen on January 19, 1963 with a history of facial paralysis for a period of two months. According to the patient he was playing basketball on November 19, 1962 and was struck in the mouth by the ball with no apparent injury. Five days later he was aware of severe pain in the right side of the face and also noted an asymetry of the face. He was seen by an oral surgeon who advised wiring the jaw because of a possible mandible fracture although the X-rays were negative. Although facial paralysis was noted at that time no treatment was advised except for the jaw wiring. The patient was first seen by a neurosurgeon on January 12, 1963. After examination and electrical diagnostic testing had been completed he was referred for otologic evaluation. Examination at this time showed a well developed white male in no acute distress, but with a marked asymmetry on the right side of the face. The patient stated that at the time of the onset of his symptoms he had severe pain on the right side of his face, but at no time had there been any evidence of hearing loss, taste disturbance or evidence of aural discharge. His examination was completely negative with the exception of the muscular control on the right side of the face. He was unable to wrinkle his forehead, close his eye or show evidence of functional movement on the right side. In repose, the patient showed very little abnormality, but on expression, the left side of the face pulled over and the right side showed typical flattening. (Figure 1) Some drooling of liquid from the right side of the mouth was noted when the patient drank fluids. The electrical testing showed that the patient had a complete right-sided facial paralysis with reaction of degeneration.

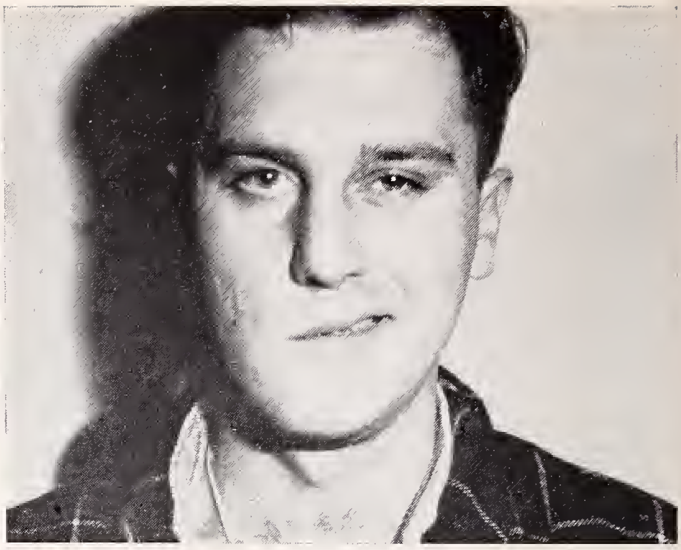

FIGURE I

At the time of surgery a post-auricular incision was made behind the right ear and a simple mastoidectomy was performed. The fallopian canal was

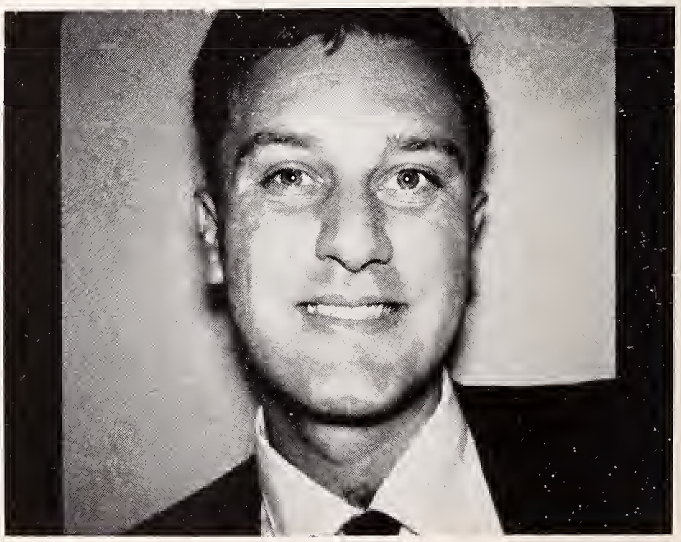

FIGURE II

uncovered without disturbance of the ossicular chain. The sheath of the facial nerve was slit from the stylomastoid foramen to the level of the horizontal semicircular canal. Considerable edema of the nerve was found just above the stylomastoid foramen. The wound was closed without drainage. There was no change in the clinical appearance of the face or the electrical testing for approximately six weeks. Gradual return of function was noted at that time until complete functional recovery was ascertained at the end of three months. (Figure 2) This improvement was also noted on electrical testing. At no time during the pre- and post-operative period was there any interference with taste or hearing.

Summary and Conclusion

A case report of Bell's palsy, treated by decompression of the facial nerve, has been presented. This patient received an excellent and satisfying clinical result although three months elapsed before this was accomplished. We now know that the earlier decompression is performed the sooner and more completely the desired result will be obtained. It is advisable that decompression be done at the end of three weeks if the patient shows no evidence of improvement clinically and by electrical testing. Only by early surgical intervention will many of these patients be saved from a life of facial disfigurement. The use of steroids, vitamin B and other vasodilating agents are of questionable value. To delay a more positive approach in the surgical treatment of these patients is an injustice to the unfortunate victims of this disease. We must be reminded again that 15 per cent of these patients show no improvement with or without medical treatment. Microscopic surgery can give hope to these unfortunate individuals so that they may live in the community unhampered by the depressing psychic effect of their paralysis.

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Among the reflex results of certain emotional states are an increase in the adrenalin in the blood and an increase in the sugar content of the blood; the heart beats more rapidly, blood leaves the abdominal organs to fill the vessels of the brain, the heart, the lungs and the muscles. The blood pressure rises, the number of red blood cells increases in the circulating blood and the coagulability of the blood is accelerated. The usefulness of the more rapid circulation is obvious and the value is evident of more red blood cells to carry the oxygen needed during great exertion and of a speedier clotting of the blood in preparation for the quick control of hemorrhage from any wounds received. As Cannon puts it: "Every one of the visceral changes that have been noted—the cessation of processes in the alimentary canal (thus freeing the energy supply for other parts); the shifting of blood from the abdominal organs to the organs immediately essential to muscular exertion; the increased vigor of contraction of the heart; the discharge of extra blood corpuscles from the spleen; the deeper respiration; the dilation of the bronchioles; the quick abolition of the effects of muscular fatigue; the mobilizing of sugar in the circulation—these changes are *directly serviceable in making the organism more effective in the violent display of energy which fear or rage or pain may involve.*"—O. H. Perry Pepper, M.D. *Opuscula Medica.* (Reprinted from The Journal of Nervous and Mental Disease, Vol. 82: 641, December, 1935).

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THE PRESIDENT'S PAGE

In the editorial section of the August issue of Connecticut Medicine, Dr. Louis Nahum wrote a most interesting article entitled, "A Look to the Future of Medicine and Medical Practice." He quoted from Carmichael's paper which discussed the development of a family health center. This center, through the close team-work of specially trained physicians, nurses and social workers, gave health oriented and comprehensive medical care to the family as a whole. To obtain training for this type of complete family care, residencies would be offered by a university medical school after a year of internship. The trainee physician would receive broad training in medicine, surgery, pediatrics, specialty clinics and laboratory studies but would be based at a nearby family health center. Training in the social sciences, public health disciplines, human psychodynamics and medical care research would all be part of the curriculum. After successfully completing three years in this training program, a master of science degree in family medicine would attest to the resident's competency in this specialized field.

In the last paragraph, Dr. Nahum asked if such a program is just a dream and I for one would like to say that it is not a dream but a proper recognition of the present and future needs in medical practice. It points out the obvious path medicine must follow in the highly urbanized regions now developing on our East and West coasts. In this way, medical practice can fill the void now existing between the general practitioner, who in treating disease, works mainly in his office and visits the sick in their homes, and the highly specialized hospital-centered physician who cannot be responsible for the health care of the individual beyond the confines of the hospital. The general practitioner of today will be replaced in these urban areas by the specially trained family health oriented specialist of tomorrow.

Today family practice types of residencies are still undergoing evaluation in some universities, where they were started a few years ago. This type of training is not the same as described by Doctors Nahum and Carmichael and, to my knowledge, these residencies have not been too successful, mainly because there is no agreement as to how much emphasis should be given to the different specialties that comprise the training program. The resident in this present type of family practice training program, as compared to a specialist trained in a specific field, is only half trained in the different branches of medicine and, in urban areas such as we see transforming our entire East and West seaboards, this type of training is insufficient and improper.

The physician, specialized in taking care of all the aspects of family health instead of occasional bouts of disease, is the only one who can offer complete care for each individual of the family. Groups of physicians so trained and working together could provide care for a large number of families and by so doing revive the long departed image of the "family doctor." They would also serve to keep the care of the patient in the home or office where it belongs more often than not, instead of in the hospital where many go because they believe this is the only place they will receive adequate treatment. It might also prevent the predicted future need for hospitals to follow their patients back into the home since proper care will not be available otherwise. With the present and future shortage of physicians and a similar shortage in hospital beds, medicine's educators and practitioners alike have a stake in developing a type of family medical practice so well discussed by the learned editor of Connecticut Medicine.

James R. Cullen, M.D.

Special Article

Medicare – Interim Observations Concerning The Physicians And Hospitals Of Connecticut

Lewis E. Caplan, LL.B.

■ The Congress of the United States has enacted Medicare as Public Law 89-97, and it was signed into law by the President on July 30, 1965.[1] The implications of this law for Connecticut physicians and hospitals bear examination at this time.

Much debate preceded the adoption of the new program, and the national and state organizations representing the physicians and the hospitals (including American Medical Association and American Hospital Association) were at odds concerning the legislation. Since passage of the law, the presidents of both national organizations have spoken out plainly to their membership concerning the urgent need for cooperation and mutual assistance between the physicians and the hospitals of the nation in the implementation of Medicare. Dr. James Z. Appel, the A.M.A. president, recently told the A.H.A. Annual Convention that existing disagreements between the physicians and hospitals could be settled by negotiation, so that both groups may work in harmony, and he cautioned that otherwise the Federal Government would step in and attempt to set up a new nationwide pattern in medicine.[3] The new president of the A.H.A., Dr. Philip D. Bonnet, responded to Dr. Appel and stated that a schism must not occur between the hospitals and the medical profession and emphasized that relations between individual hospitals and individual physicians had always been close, and that the hospitals as a group and the physicians as a group had to work together at this time to make Medicare work for the benefit of all concerned, and particularly the patients.[4]

Now that Medicare is law, its practical effects upon the physicians, the hospitals, and their patients in Connecticut may be noted. Medicare is actually two related health insurance programs for persons 65 and over.[1] The basic plan is contained in Part A of the law and provides protection against the costs of hospital and related care. Part B of the law contains a voluntary supplementary plan providing protection against the costs of physicians' services and other medical and health services not included in the basic plan. The basic plan will be financed through a separate payroll tax and trust fund. Enrollment in the supplementary plan will be voluntary and will be financed by a small monthly premium ($3.00 per month initially) paid by the individual, and an equal amount supplied by the Federal Government out of general revenues. The premiums for people now covered by Social Security, Railroad, and Civil Service Retirement Plans, who voluntarily enroll under Part B, will be deducted from their monthly checks. Persons not covered by any of those three programs who desire Part B coverage will make their monthly premium payments to the Government out of their own pockets. These are fundamental facts which the physicians and the hospitals in Connecticut must comprehend.[2,5,6,7,8]

Another group of basic facts should be considered. Both the basic hospital insurance plan (Part A) and the voluntary supplementary plan covering physicians' and other services (Part B) become effective on July 1, 1966, except for certain services in extended care facilities which become effective on January 1, 1967. Both Part A and Part B have deductible amounts which the individual must pay, under Part A $40.00 for the first 60 days, plus $10.00 per day for 30 days in excess of 60 days for each "spell of illness," and under Part B an annual deductible of $50.00, after which Part B will cover only 80 per cent of the patient's bill (above the deductible) for certain specific services. Both plans have limitations as to the services and the type and quality thereof which will be provided, and Part A has definite maximum limits for in-patient services of up to 90 days in each "spell of illness." Other important limiting facets must be omitted in this review, but must be known and understood by those concerned in Connecticut.[2,5,6,7,8]

The words of this major new legislation, which will effect approximately 250,000 people in Connecticut of 65 or over on July 1, 1966, and which will rapidly effect more and more people, thereafter, must now be translated into action. The physicians and the hospitals of Connecticut must promptly

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and thoroughly educate themselves in the complexities of the law, and must work with the Social Security Administration, various parts of the State Government, and with the Connecticut Blue Cross, the Connecticut Medical Service, and with the private insurance companies to interpret and flesh out by regulations the various aspects of the law.[7, 8] Neither the physicians nor the hospitals of Connecticut can afford to sit idle while others tell them how this law is to work and what it is to mean to the people of this State, who are, after all, the patients of both groups.

First, the people of Connecticut must be educated concerning the limitations of both Part A and Part B, so that they will not expect more than will be available to them. The physicians and the hospitals of Connecticut must join together in interpreting Medicare to their patients, beginning now and certainly well before July 1, 1966. It must be emphasized again and again to the public that Part B coverage is entirely *voluntary,* and that failure of the individual to enroll will deprive him of the benefits for services of physicians and otherwise under Part B. Unless this point is driven home, chaos and confusion may develop.

Second, with the limitations of the law in mind, the physicians and hospitals of Connecticut must work with Connecticut Blue Cross, Connecticut Medical Service, the private insurance carriers, the Social Security Administration and the appropriate state and national associations to supplement both Part A and Part B, to fill in the gaps created by the deductible features, to bridge the administrative gap between Parts A and B, and to take into consideration the limitations of the benefits under both Parts A and B.

Third, the physicians and the hospitals of Connecticut must assert leadership in establishing the standards of medical care which is to be rendered under both Parts A and B, so that they will not be told by others what these standards shall be. The crux of the system of voluntary medicine in Connecticut is the self-regulation of its physicians and hospitals, and this concept must be maintained and strengthened in this vast new program.

Fourth, the physicians and the hospitals of Connecticut must prepare themselves for providing the actual care of the patients who will come under this plan, and for the administration of this care. Many practical details of administration must be worked out, but they should be no more onerous on either the physician or the hospital than other existing private and government plans and programs. It must be recognized and emphasized, however, that the manner in which Part B was finally enacted has created administrative complexities in Medicare which must be understood and resolved promptly by all concerned.

Fifth, the physicians and the hospitals of Connecticut must plan together for the orderly development and growth of additional facilities to care for the increasing number of individuals who will become eligible for benefits under Parts A and B. It is anticipated that Connecticut's existing hospital facilities can handle the initial impact of the law without becoming over-burdened, but our growing and aging population dictates our urgent planning for more and possibly new types of facilities to meet the new demand. These two groups must cooperate particularly in the orderly development of high standard convalescent and nursing home facilities, which will be supported under Part A after January 1, 1967, to avoid the random growth in Connecticut of inadequate facilities of poor quality.

To summarize, Medicare is now law, but it must be put into action, and a vast number of basic details remain to be worked out. The public must be taught the limitations of the law and what to expect from it in practice. The physicians and the hospitals of Connecticut must work together and with Federal and State agencies and various insurance groups and third parties to make the law effective, so that the services to be rendered in Connecticut under the law will be the finest quality, in the highest tradition of Connecticut medicine. The physicians and the hospitals must take the initiative in this program, or others will set the standards and provide leadership in a lesser manner. This is not a Federal or State problem. It is both the duty and the privilege of Connecticut's physicians and hospitals to share in this new task for the benefit of Connecticut's people.

(To Be Continued)

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FROM THE AMERICAN MEDICAL ASSOCIATION

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James R. Cullen, M.D., President
Connecticut State Medical Society
Dear Doctor Cullen:

In response to an urgent appeal to American Medicine by President Lyndon B. Johnson, the American Medical Association is assisting the newly formed voluntary organization known as PROJECT VIET-NAM. This Project, administered by The People-to-People Health Foundation, Inc., is a cooperative medical effort of America's inter-voluntary agencies for the people of South Viet-Nam. The Agency for International Development (AID) is also participating in this program that appears vital to our success in the present crisis in Asia.

PROJECT VIET-NAM was developed to help alleviate the problem of the critical shortage of physicians in South Viet-Nam—a problem that is crippling and demoralizing the civilian population of the country. The matter is of concern to all physicians—those believing that human life everywhere is sacred, and those sharing a stake in the security of the United States. The American Medical Association, cooperating with the President's request, is appealing to each County and State Society for participation in a program that will assist in the procurement of volunteer physicians for this important venture.

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GENERAL SURGEON — Board certified, Connecticut license, 33 years of age. Would like to associate with a partner or group with especial interest in vascular surgery.

PLACEMENT OPPORTUNITIES

CHIEF, HOSPITAL SECTION—to head program of inspecting and licensing medical care facilities in the state as required by statute; directs the Hill-Harris program at state level. Requires completion of general internship in A.M.A. approved hospital plus a combination of experience totaling five years and made up of one or several of the following elements: up to two years in an approved residency in any field in a hospital with a teaching or educational program; up to two years of graduate study in hospital administration or public health; employment in hospital administration; experience as a staff committee member or on any staff service while holding full hospital privileges. Reply to B. Dearington, Connecticut State Department of Health, 79 Elm Street, Hartford. EQUAL OPPORTUNITY EMPLOYER.

OCCUPATIONAL PHYSICIAN for state ememployees' clinic located in Hartford, 35 hour week, 3 weeks vacation, up to 120 days sick leave, paid insurance program, social security and liberal retirement. Requires at least two years' general practice. Starting salary $12,040 going up to $13,000 at the end of first year, then advancing $560 annually to maximum of $15,080. Reply directly to B. Dearington, Connecticut State Department of Health, 79 Elm Street. Hartford. EQUAL OPPORTUNITY EMPLOYER.

PSCHIATRISTS & GEN'L. PRACTITIONERS desirous of part-time or full-time employment in a modern progressive State Mental Hospital are needed. Please contact: John F. Lowney, Jr., M.D., Superintendent, Connecticut Valley Hospital, Box 351, Middletown, Connecticut.

PHYSICIAN AND INTERNIST for Chronic Disease, Cancer and Tuberculosis Hospital. Must have Connecticut license and Board eligibility or equivalent experience. Salary range $13,420 or $17,600. Three bedroom, two bath apartment available with maintenance at minimal cost. Liberal fringe benefits and insurances. Reply to Uncas-On-Thames Hospital, Norwich, Connecticut.

ANYONE INTERESTED IN THE ABOVE IS ASKED TO CONTACT THE GENERAL MANAGER'S OFFICE, 160 ST. RONAN STREET, NEW HAVEN.

1965 MEETINGS

October 10—The annual scientific meeting of the American College of Nutrition will be held at the Americana Hotel in New York City on Sunday, October 10, 1965, at 10 a.m. For further information, please contact Robert A. Peterman, M.D., F.A.C.N., Secretary, 3 Craig Court, Totowa Borough, New Jersey 07512.

October 28 — 182nd Semi-Annual Meeting of The New Haven County Medical Association will be held at the Waverly Inn, Cheshire, Connecticut. The Business Meeting is tentatively scheduled for 3:30 P.M. Further details will be furnished as soon as arrangements are completed.

November 3-5—New England Postgraduate Assembly will be held at the Statler-Hilton Hotel, Boston, Massachusetts.

November 28-December 1—19th Clinical Convention of the American Medical Association to be held in Philadelphia, Pennsylvania.

December 8—Connecticut Society of American Board Surgeons Annual Meeting to be held at the Hotel America in Hartford, Connecticut.

1966 MEETINGS

April 26-28—174th Annual Meeting of the Connecticut State Medical Society to be held at the Statler-Hilton Hotel, Hartford, Connecticut.

Help your Society Office to maintain an accurate mailing list. Send your change of address promptly to Connecticut Medicine, 160 St. Ronan Street, New Haven, Connecticut 06511.

Letters To The Editor

To The Editor:

Your editorial in Vol. 29, No. 8, pages 543-547 of the August 1965 issue of CONNECTICUT MEDICINE entitled "The Medical Profession and The Government," prompts a response. I was about to write an essay which was based on the same documents, i.e., the Report[1] of The President's Commission on Heart Disease, Cancer and Stroke, Vol. II. However, it is apparent that more than a paper or editorial comment is required.

As Chairman of the Public Relations Committee of the Fairfield County Medical Association and a member of the committee for more than six years, I have begun to learn the dimensions of our professional future. The care of people, irrespective of specialty, is our essential business. In devising ways to improve that care ("business") we must establish a state of receptiveness to new concepts and a creative attitude where innovations are needed.

The frustrations we encounter are partially our own fault and because of poor physician input to legislative action.

1. We manage the administration of patient care by delegating the responsibility for logistics to para-medical personnel. These individuals owe their livelihood and career growth to hospital and clinic administration. Why should *they*—when the time for decision comes—feel any loyalty to organized medicine?
2. We attempt to influence legislation after the bills have been submitted. When our legislators ask for help before writing bills they are given casual responses, not in-depth studies. Why should *they*—when the time for decision comes—feel any loyalty to organized medicine?
3. We all have contacts with hospital trustees through committees or as officers of the hospital staff. Some physicians feel constrained to establish a relationship with trustees at cocktail parties where the atmosphere is conducive to a variety (?) of policy making. Why should *they*—when the time for decisions come—feel any loyalty to organized medicine?
4. We have various relationships with hospital, fund, foundation and agency administrators. With many of these full-time professionals a reasonable rapport can be attained. But many physicians resent the demands on their time and energy that such activities require, and demonstrate this resentment by rudeness and failure in responsibility. Why should *they*—when the time for decision comes feel any loyalty to organized medicine?

These four points are enough to illustrate some areas of friction and discontent we need to alleviate if any future is ours to mold. Reams of paper have been covered with diatribes "against" the changes we see, but I find only a mote of constructive proposals. In addition, when constructive proposals are made, our communications are so unwieldy and obstructive that the force for change or concensus is lost by the time the action areas are reached. So again, I propose the following course of action:

a. Seek to immediately generate legislation which amends or augments the state statutes for hospital and medical practice to establish the post of Director of Clinical Services[2] in *community* hospitals. Proper medical staff organization and conduct of its affairs must be worked at 365 days a year. This is essential, for nothing can take its place and everything depends upon its success. I envision this post as a full-time opportunity for an experienced clinician. As an employee of the Trustees he is responsible for the *clinical* administration of the hospital and is co-equal with the Administrator. Funds for his office could come in part from a staff assessment which insures his liasion with the active membership. Thus, the grass-roots of medical care attains a much needed continuity of effort which we have not enjoyed.

b. Establish immediately the pre-eminence of organized medicine where the mushrooming regional hospital planning councils are a fait accompli. In our state the Connecticut Hospital Association has been working toward these goals for three years with the representatives on the sidelines as observors. On June 13, 1965 the *hospital administrators* agreed to tax their institutions 10¢/patient day to develop a fund of $200,000.00. These funds will be used to hire an executive secretary, to develop survey data and to devise articles of incorporation. The purpose is to prevent re-duplication of unnecessary and expensive facilities by moral suasion. I submit that organized medicine, meaning the County Medical Societies, must establish a vested interest in this group or again lose a valuable social tool.

c. Give constructive support to the Federal legislation[3, 4] now in hearings before the House of Representatives Committee on Interstate and Foreign Commerce. In this case, I propose that the Fairfield County Medical Association immediately ask for State legislation to be presented to the Assembly. This would authorize an appropriation to be used in establishing an advisory council. The advisory council would be charged with recommending a location for a complex for Heart Disease, Cancer and Stroke and with preparing a proposal for submission to the Surgeon-General.

d. Lastly, each county medical association should immediately ask their Public Relations Committees to prepare a statement with respect to Medicare. A model for these statements is that of Hartford County. It is moderate in tone, succinct and totally lacking in contentious language. The committee in Fairfield County recommended such a statement on September 10, 1965. I further contend that the authority and mandate for all these actions and initiative has been given us by resolutions from the AMA House of Delegates in June of 1965.

In conclusion, I am enclosing copies of the recent hearings before the U.S. Senate and House of Representatives on H.R. 3140 which will give you further data.

Sincerely yours,

Warren Zeph Lane, m.d., *Chairman*
Public Relations Committee
Fairfield County Medical Association

References

1. Report of the President's Commission on Heart Disease, Cancer and Stroke. Vol II, Feb. 1965. U.S. Government Printing Office, Washington, D. C. 20302
2. Cadmus, Robert R., "Next Step in Specialization," J.A.M.A. Vol. 189 No. 5, pp. 124-126, Aug. 3, 1964.
3. Hearings before the Committee on Interstate and Foreign Commerce, House of Representatives, H.R. 3140, July 1965. U.S. Government Printing Office, Washington, D. C. Serial No. 89-20.
4. Hearings before the Subcommittee on Health of the Committee on Labor and Public Welfare, U.S. Senate S596 U.S. Government Printing Office Washington, D. C.

To The Editor:

I thought it might interest you to know we have a good supply of the enclosed leaflet, "The Ten Commandments for the Prevention of Alcoholism" which was excerpted from my paper *Prevention of Alcoholism* published last year. I would be happy to furnish copies, at no charge, to any of your readers who might wish to write for them.

With kind regards, I am

Sincerely yours,

William B. Terhune, m.d.

New Canaan, Conn.

Letters to the Editor are welcome and will be published for informative and educational purposes as space permits. As with other material which is submitted for publication, all letters will be subject to the usual editing. Address all correspondence to: The Editor, Connecticut Medicine, *160 St. Ronan Street, New Haven, Connecticut, 06511.*

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Control Of True Hemophiliacs

Historically, transfusions of bleeders in hemorrhagic crises has been done for more than a century. A report in Lancet in 1840 cited a boy "bleeder" who was given a direct transfusion with good results. Over the years the diagnostic tests and the treatment of bleeding problems have been moderately refined but adequate guidelines for controlling various problems are not widely disseminated. In this light the circular prepared by the Committee on Standards of the American Association of Blood Banks, February, 1965 is welcome indeed.

The most frequent and most severe problems are encountered in the true hemophiliacs who are deficient in AHF (Factor VIII). Treatment of AHF deficiency requires fresh frozen plasma (FFP), fresh blood, or AHF-rich fibrinogen. The other deficiencies are less frequent, usually milder and with the exception of Proaccelerin (Factor V) can generally be suitably controlled with banked blood or plasma from indated banked blood.

An abstracted chart of the basic principles for controlling true hemophiliacs follows:

Type of Insult	*Desired AHF Level*	*Treatment*
1. uncontrolled soft tissue or joint bleeding; tooth extraction	in excess of 5-10 per cent	FFP 7 ml/lb; subsequent doses of 3.5-5.0 ml/lb to keep level up for 48 hrs. or longer. For tooth extraction, additional FFP on 5th day.
2. Major injuries with bleeding	15-30 per cent	FFP; if hypervolemia, edema or heart failure occur, use AHF-rich fibrinogen
3. Surgery	30-35 per cent	AHF-rich fibrinogen with FFP supplements.

Several methods of quantitating factor VIII are available today. The clinical pathologists of almost every community hospital would do well to have a standardized reliable method available, thus making clinical control of hemophiliacs easier and a matter of some precision.

Hollis Truax, m.d.
Assistant Pathologist
Norwalk Hospital

References

1. Lane, S.: Haemorrhagic diathesis: Successful transfusion of blood. Lancet, 1: 185-188, 1840.

2. Circular of information for the use of single donor plasma (human) fresh frozen by physicians; Committee on Standards of the American Association of Blood Banks; February, 1965.

AROUND THE STATE

Connecticut Pathologists Teach At Chicago Meeting

The annual combined meeting of the American Society of Clinical Pathologists and the College of American Pathologists held in Chicago October 16-23 features Workshops conducted by several Connecticut pathologists.

On Tuesday, October 19 and Wednesday, October 20 Dr. Alfred Zettner, Director of the Clinical Microscopy Laboratory at the Yale-New Haven Medical Center presents a Seminar and Workshop on Atomic Absorbtion Spectroscopy. Included are descriptions of methodology and practice in the use of this new instrument for determination of calcium, magnesium, iron, copper and lead in serum and urine. Atomic absorbtion spectroscopy involves the production of emissions of the exact wavelength of the ion under study by means of special coated tubes. The emissions are then passed through a heated vaporized solution of the test material which produce measurable absorbtion of the specific emission. The method is thought to be more accurate than flame photometry and to be free of some of the problems of alternative methods of analysis.

On Wednesday, October 20 Dr. Roy Barnett, Director of Laboratories at Norwalk Hospital, conducts a workshop entitled "Statistical Methods in the Clinical Laboratory." The workshop, planned for 50 participants, covers simple guidelines for using statistical tools and includes discussion of specific applications in the laboratory. Other members of the Faculty are S. Raymond Gambino, M.D., Robert G. Hoffman, Ph.D. and Lawrence P. Skendzel, M.D.

Following the meeting there is a Four Day Tutorial on Bacteriology for Residents directed by Dr. Raymond C. Bartlett of Hartford Hospital. This includes lectures, demonstrations and laboratory exercises in identification of such important organisms as enteric bacteria, gram-positive cocci, Hemophilus, Neisseria, Listeria, Bacteroides, Mimeae and various mycobacteria. Quality control in the bacteriology and testing for antimicrobial susceptibility are also covered.

Mental Health Services Plan

The statewide Plan for Comprehensive Community Mental Health Services in Connecticut, as developed by over one thousand citizens of our state and the Department of Mental Health's Planning Project, will be presented to Governor John N. Dempsey on November 4th, 1965.

The official presentation will take place at Connecticut's First Mental Health Congress, to be held at 8:00 P.M. in the auditorium of the Aetna Life Insurance Company, 151 Farmington Avenue, Hartford.

Speaking to the Congress will be Governor Dempsey; Dr. John Donnelly, State Mental Health Board Chairman; Dr. Wilfred Bloomberg, Mental Health Commissioner; Dr. Max Pepper, Planning Project Director; and a prominent national figure.

For further information, you may call David K. Boynick, Assistant to Commissioner of Mental Health, Hartford, 527-6341, Ext. 2831, or Mrs. Jennifer Robbins, Program Assistant for the Mental Health Planning Office, New Haven, 562-6128.

News From The Connecticut State Department Of Health

Anti-pollution action for the Ten Mile and Housatonic Rivers was taken by the New England Interstate Water Pollution Control Commission at a two-day session, September 13 and 14 at Chatham, Massachusetts.

Among other actions the Commission agreed that New ork State would maintain the Ten Mile River in a condition suitable for certain recreational uses. The Ten Mile River originates in Amenia, New York and Sharon, Connecticut and travels southward where it enters the Housatonic River near the villages of Gaylordsville and Bull's Bridge.

It was also reported at the meeting that sewage treatment systems for the towns of Lee and Great Barrington, Massachusetts were in the planning stages. When completed, these systems would considerably improve the quality of the Housatonic waters as it enters Connecticut.

The New England Interstate Water Pollution Commission was set up by Congress in 1947. Member states include New York, Maine, New Hampshire, Massachusetts, Rhode Island and Connecticut.

Representing Connecticut at the Chatham meeting were Dexter D. Coffin, Chairman of the Board, C. H. Dexter and Sons, Windsor Locks; Franklin M. Foote, M.D., State Health Commissioner; Leonard F. Whalen, Greenwich; John J. Curry, Chief Engineer, State Water Resources Commission; and David Wiggin, Connecticut State Department of Health who serves as a technical consultant.

News From Yale University School Of Medicine

Reconstruction work was started August 23 at the Brady Memorial Laboratory in the Yale-New Haven Medical Center to improve facilities for eye, ear, nose and throat research by the Yale University School of Medicine.

The renovations, under a $325,000 contract awarded last week to the George B. J. Macomber Co. of New Haven, will make way for an expanded program of research on blindness and deafness in the School of Medicine's Sections of Otolaryngology and Ophthalmology, according to Dean Vernon W. Lippard.

While much of the research facilities used by both sections will be housed in the renovated area of the Brady Laboratory, Dean Lippard said, patient care will remain at its present location in the Clinic Building, 789 Howard Avenue.

The area to be renovated was formerly occupied by the medical school's Department of Epidemiology and Public Health, which moved into the new $4,200,000 Laboratory of Epidemiology and Public Health last April.

Centralizing and expanding the space devoted to otolaryngology (study of ear, nose and throat dieases) and ophthalmology (study of eye diseases) will permit increased facilities for research by students working toward medical doctorates, as well as by members of the Yale School of Medicine faculty. It also will allow the addition of researchers and technologists to carry out the enlarged program.

Besides laboratory space and academic offices, the centralized facilities will provide areas for powerful electron microscopes, a cold room to be utilized for biochemical research, and an averaging computer which is a new device to study the physiology of the auditory system and the role of nerve endings.

The proposed research program of the Section of Otolaryngology, which is headed by Dr. John A. Kirchner, Professor of Otolaryngology, will include systematic examination of nerves of the larynx and pharynx, and classification of the course and spread of tumors of the larynx. The physiology of hearing and changes which lead to deafness will also be studied.

Dr. Marvin L. Sears, Associate Professor of Ophthalmology, will expand the studies of his Section of Ophthalmology in work which includes electronmicroscopy of the anterior segment of the eye, cell biology and microchemistry of the ciliary epithelium and retina, aqueous humor dynamics, and histochemistry and histopathology of the developing and diseased eye. This research is related to the study of glaucoma, a condition which frequently leads to blindness.

The total cost of reconstructing and equipping the new research laboratories and academic offices in Brady Laboratory will be $500,000. It will be financed in part by a $250,000 grant from the National Institutes of Health. Plans are being pursued to obtain the necessary balance, toward which grants of $25,00 already have been made by Seeing Eye, Inc., and $5,000 by the Alcon Laboratories of Fort Worth, Texas.

A total of $470,229 in research grants has been awarded by the U. S. Public Health Service to the Yale School of Nursing.

These grants have a significance far beyond their record amount, according to Dean Florence Schorske Wald of the Yale School of Nursing. They reflect the pioneer role of the School as a graduate center, with a responsibility to carry out research for the improvement of nursing care of patients.

The grants have been awarded through the Division of Nursing, Bureau of State Services of the USPHS. The funds will support seven different projects—three that have just been initiated and four that have been in progress for some time and will be continued with the federal grants.

Dean Wald explained that graduate schools of nursing have concentrated on teaching nursing rather than studying nursing practice systematically. The small amount of research which has been done was devoted almost entirely to studying nurses rather than nursing and studying curricular problems. It has only been in the past few years that qualified nursing schools, such as the Yale School, have undertaken major research programs aimed at improving patient care and helping patients to make better use of health measures, medical and otherwise.

The Dean pointed out that with the support of the $470,229 in federal grants, the program of the Yale School is now about equally divided between teaching and research. She said that this pioneer work in research is enriched because of the close working relationship of the Yale nursing faculty with other University units, notably the Yale School of Medicine and its Department of Epidemiology and Public Health, and the Yale Departments of Psychology, Sociology and Philosophy.

Semi-Annual Meeting New Haven County Medical Association

DATE

Thursday, October 28, 1965

PLACE

WAVERLY INN, CHESHIRE, CONN.

TIME

Business Meeting — 3:30 P.M.
Social Hour with dinner following — 6:30 P.M.

SPEAKER

Mr. Joseph H. Coakley
Staff, Bureau of Health Insurance (H.E.W., Social Security Administration)
Baltimore, Maryland

SUBJECT

"Medicare from the Physician's Point of View"

AMA Prepares List For Medical Symbol

The AMA is revising a list of manufacturers and distributors of special identification devices which carry the AMA emergency medical symbol.

In June, 1963, a hexagon-shaped emblem was adopted by the AMA to be carried by a victim requiring special attention in case of accident. The symbol is displayed on a bracelet, medallion or card.

The World Medical Association has adopted the symbol as an international indicator of the presence of medical information needed in an emergency.

All manufacturers and distributors of signal devices bearing the symbol are asked to inform the AMA if they wish to be included in this listing. They should write: Emergency Medical Identification, American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610.

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Leukemia Patterns Are Changing

Leukemia remains an invariably fatal disease, but improved medical treatment is attacking some of the causes of its victims' deaths. As a result, some of these persons are living longer.

A report in the current Journal of the American Medical Association noted "striking changes" during the past 10 years in the natural history of acute leukemia among patients at the National Cancer Institute, Bethesda, Md. The report also notes the increasing survival time of patients under age 20 who have acute lymphatic leukemia.

"In general, there has been a marked decline in the numbers of patients dying of hemorrhage and a sharp increase in the incidence of fatal infection," the report said.

This takes note of the fact that some anti-tumor treatment breaks down the body's infection defenses. Thus, some kinds of infection rise as hemorrhages decline. Even though they eventually died, however, many leukemia victims' lives were prolonged because doctors were able to stave off one or another of the causes of death.

The report credited improvements in treatments, such as specific antileukemic agents, combination chemotherapy programs, and blood platelet and granulocyte transfusions, for the change in leukemia patterns over the 10-year period.

Four physicians from the Acute Leukemia Service of the National Cancer Institute surveyed the records of 444 leukemia victims who died there between 1954 and April 30, 1963. The authors are Evan M. Hersh, M.D., Gerald P. Bodey, M.D., Boyd A. Nies, M.D., and Emil J. Fredireich, M.D.

The study was undertaken to assess the effect of the new therapeutic measures on the course of acute leukemia.

"A striking finding of this body is the decline in fatal hemorrhage subsequent to platelet transfusion therapy," the report said.

All hemorrhage declined from 66.8 per cent at the start of the 10-year period to 37.2 per cent at the end.

Since patients regularly received platelet transfusions after 1960-61, "it is probable that the decline in hemorrhage is related to this added therapeutic measure," the report said.

The authors noted, however, that it is difficult to secure enough platelets for large adults. Platelet transfusions have less success during periods of hemorrhage and infection.

Chemotherapy and such supportive measures as platelet transfusion are responsible for the improved survival of patients under age 20, the authors said.

WOMAN'S AUXILIARY

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On Monday, September 13, the Woman's Auxiliary held a workshop and Board Meeting at the Connecticut State Medical Society.

The workshop was planned for State officers and Chairmen, County presidents, and presidents-elect, and certain County chairmen.

There will be another such meeting on October 25th when emphasis will be placed on those committees whose chairmen will attend the Regional Workshop in New York City, October 20-22 and will report back what they have learned.

As an example of some activities of Community Service, those present were shown Safety Films provided by the AAA and available from them to be used by County Auxiliaries and their committees on Safety, Rural Health, School Health and Community Services.

Mrs. Richards, our President, spoke about the desire of our National President, Mrs. Sutter, that all Auxiliaries seek to evaluate and plan the Health Needs of their various communities and how to met them.

Mr. James G. Burch, Director of Communications and Public Relations, for the Connecticut State Medical Society told us of the Society's sponsorship of a series of 13 weekly half-hour radio programs on mental health called "Mirror To The Mind" with thirty-nine physicians from points across the United States participating in the panel presentations. These programs are also available in record form for use by County Auxiliaries and their Community Service Committees by contacting Mr. Burch at the Connecticut State Medical Society. He also spoke of the Society's "Main Street America" Program. An objective of this program is to help discover ways to resolve the communications dilemma which today confronts the medical and other professions. The booklet "Main Street America" outlines this five-point program and is available by writing to Mr. Burch.

The Semi-Annual Meeting of the Auxiliary will be held on Monday, November 8th at the Mermaid Tavern of the Stratford Motor Inn with a Gourmet's Buffet for luncheon following the meeting.

NEW MAGAZINE FOR PHYSICIANS' WIVES

A new magazine, "MD's Wife," is being published by the Women's Auxiliary to the American Medical Association.

Designed especially for physicians' wives, the bimonthly publication features four-color illustrations, national advertising, and a variety of features of interest to women.

Articles about pilot-wives and the adventures of a physician's wife in learning about Japanese geisha girls are part of the first issue's contents. The four-color cover features a painting by abstract-expressionist Hans Hofmann.

Approximately 90,000 copies of the magazine will be distributed to members of the AMA Auxiliary, the Women's Auxiliary of the Student American Medical Association, and to officers and headquarters of other women's voluntary service organizations.

"MD's Wife" replaces the quarterly Bulletin of the Women's Auxiliary. The editor is Mrs. John Wagner, of Clarks Summit, Pennsylvania.

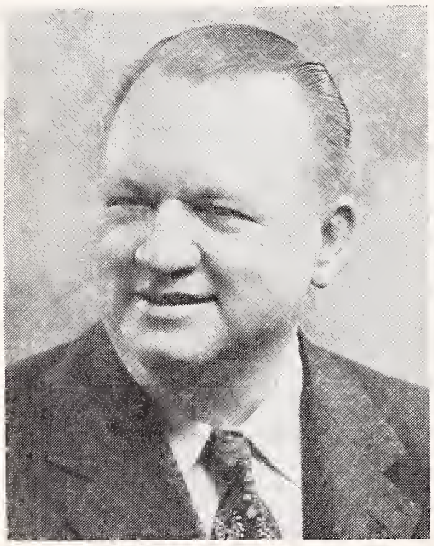
OBITUARY

John M. Freiheit, M.D.

1903 - 1965

Dr. John M. Freiheit, former Chief of Obstetrics and Gynecology at the Waterbury Hospital died August 28, 1965, after a long illness. He was born in Derby, Connecticut on June 26; 1902, the son of the late John and Mary (O'Brien) Freiheit.

Dr. Freiheit was graduated from Yale College in 1924 and from the Yale Medical School in 1927. He started his practice of obstetrics and gynecology in Waterbury in 1930 after completing the residency in his specialty at the New Haven Hospital.



He was a past president of the New Haven County Medical Association. He was a diplomate of the American Board of Obstetrics and Gynecology. He was also a Fellow of the American College of Surgeons and a member of the American Academy of Obstetrics and Gynecology. He was a member of the Waterbury Medical Association, the New Haven County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Freiheit was an accomplished artist and a past president of the Connecticut Physicians Art Association.

Over the years I have been privileged to have been associated with John at the hospitals and at the medical societies. His interest, enthusiasm, good humor and good judgment have made our endeavors not only effective but also enjoyable. He has been a sympathetic and competent physician and surgeon, a delightful companion and a loyal friend.

He will always be remembered by the community which he served so faithfully, by his grateful patients and by his colleagues who respected him as a man and as a physician.

He is survived by his widow, Mary Elizabeth (Ennis) Freiheit, one son, John M. Jr., a deacon at the Immaculate Conception Seminary, one daughter, Mrs. Johanne Burrington and three grandchildren.

J. H. Green, M.D.

In Memoriam

Marinoff, Philip A. — Milford; University of Rome (Italy) Medical School, 1941. Dr. Marinoff was an ear, nose and throat specialist in New Haven and Milford. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Marinoff died September 12, at the age of 53.

Whalen, Edward J. — Hartford; Yale School of Medicine, 1908. Dr. Whalen was an ear, eye, nose and throat specialist in the Hartford area for a number of years. He was a captain in the U. S. Army Medical Corps, during World War I. Dr. Whalen was a consultant in Otolaryngology to St. Francis Hospital, McCook Memorial Hospital, Hartford Hospital, the Institute of Living, Cedarcrest Hospital, Newington; Charlotte Hungerford Hospital, Torrington; Veterans Home and Hospital, Rocky Hill; and Manchester Memorial Hospital. He was a member and past president of the Hartford Medical Society, the Hartford County Medical Association, the Connecticut State Medical Society, and the New England Oto-Laryngological Society. He was a fellow of the American College of Surgeons. Dr. Whalen was a member of the American Academy of Ophthalmology and Otolaryngology, the American Laryngological Rhinological and Otological Society, the American Laryngological Society and the Broncho-Esophagological Society. Dr. Whalen died August 30, at the age of 79.

Special Notices

LAWRENCE AND MEMORIAL HOSPITALS

New London, Connecticut

Fourth Series of courses in Basic Science as Related to Clinical Medicine

This year emphasis will be placed on "Acid-Base Balance, Fluids, Electrolytes and Edema Disorders."

October 12, 1965 — June 7, 1966

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Oct. 12, 1965—Clinical meaning of pH
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Nov. 16, 1965—Clinical metabolic acidosis—renal failure, diabetic acidosis, and lactic acidosis.
Nov. 30, 1965—Clinical metabolic alkalosis—emesis
Dec. 21, 1965—Clinical respiratory acidosis—chronic lung disease
Dec. 28, 1965—Clinical respiratory alkalosis—including hepatic coma
Jan. 11, 1966—Review of acid-base balance with patient presentation
Jan. 25, 1966—Body water and ADH in man
Feb. 8, 1966—Body sodium and its control in man
Feb. 22, 1966—Clinical hyponatremia
March 8, 1966—Clinical hypernatremia
March 22, 1966—Hyper- and hypotassemia
April 12, 1966—Body calcium and its control
April. 19, 1966—Hyper- and hypocalcemia
May 3, 1966—Hyper- and hypomagnesium in clinical medicine
May 17, 1966—Electrolyte disturbances of renal failure
May 31, 1966—Electrolyte disturbances of cardiac failure
June 7, 1966—Daignosis and management of edema disorders

Lecturers: Richard Gorlin, M.D., Assistant Professor of Medicine, Harvard Medical School; David Paul Lauler, M.D., Associate in Medicine, Peter Bent Brigham Hospital; and John William Vester, M.D., Assistant Professor of Medicine, University of Pittsburgh.

Registration is limited to 75 and the fee for the 21 seminars will be $85.00. The sessions will combine formal instruction and informal discussions. For optimum effectiveness, enrollment must be limited and applications will be accepted in order of their receipt.

Fees for Registration are tax deductible items.

The course must be subscribed to in its entirety.

Checks should be made payable to the Lawrence and Memorial Hospitals.

Post graduate credits from the Academy of General Practice of 40 hours will be granted to all participants who complete the course.

ORTHOPAEDIC CLINICAL MEETING AND ALUMNI REUNION

October 22, 1965

Moderator: Burr H. Curtis, M.D., Medical Director
8:30—Registration (entrance of Auditorium).
9:00-9:05—Introduction.
Burr H. Curtis, M.D., Medical Director
9:05-9:10—Welcome.
B. E. Foss, Executive Director
9:10-9:30—Muscular Skeletal Aberrations of Childhood.
Beckett Howorth, M.D., Greenwich
Discussion: Sydney Sewall, M.D., Hartford
9:35-9:55—Effect of Position on Radiographic Anatomical Landmarks.
Herbert L. Snyder, M.D., Manchester
Discussion: Paul J. Kingston, M.D., Hartford
10:00-10:20—Posterior Tibial Transplant for Spastic Equinovarus Deformity.
Meade J. Luby, M.D., Hartford
Discussion: William Cooper, M.D., New York, N. Y.
10:30-10:45—Break.
10:45-11:05—Treatment of Congenital Dislocation of the Hip in Infancy.
Vincent J. Turco, M.D., Hartford
Discussion: Albert S. Atwood, M.D., Torrington
11:10-11:15—Introduction of Guest Speaker.
Leo A. Green, M.D., Forest Hills, N. Y.
11:15-12:15—Epiphyseal Stimulation to Avoid Amputations: Result of Fourteen Years' Experience.
Harold A. Sofield, M.D., Oak Park, Ill., Professor, Department of Orthopaedic Surgery, Northwestern University
12:15-12:30—Question Period.
12:30-1:15—Tour of Hospital.
1:15-2:00—Luncheon (on reservation only).
2:00-2:20—Presidential Address—Biomechanics of Traction Epiphyseal Injuries.
Leo A. Green, M.D., Forest Hills, N. Y.
Discussion: Otto G. Goldkamp, M.D., Hartford
2:25-2:45—Genetic Factors in Idiopathic Scoliosis.
Robert L. Fisher, M.D., Resident
Discussion: Charles W. Goff, M.D., Hartford
2:50-3:10—Legg-Calvé-Perthes Disease: Long-term Results.
Harry R. Gossling, M.D., Hartford
Ray L. Foster, M.D., Resident
Discussion: Maurice M. Pike, M.D., Farmington
3:15-4:05—Neurofibroma of the Spine with Neurological Manifestations.
Burr H. Curtis, M.D., Hartford
Francis P. Saunders, M.D., Resident
Discussion: Wayne O. Southwick, M.D., New Haven
4:10-4:30—Multiple Osteotomies and Roddings in Osteogenesis Imperfecta.
John W. Stetson, M.D., Resident
4:30-4:50—Discussion: Harold A. Sofield, M.D.
4:50-4:55—Floor Discussion.
4:55-5:00—Closing Announcements.
5:00-5:15—Business Meeting (Alumni Association).

Alumni Ladies' Program

8:30—Meet at Hospitality Desk, Newington Hospital for Crippled Children, for all-day program.

Alumni and Wives

6:15—Cocktails }
7:15—Dinner } Wethersfield Country Club. (Dress informal)

Guest speaker through grant from Merck Sharp & Dohme Postgraduate Program.

AMERICAN COLLEGE OF PHYSICIANS

presents Postgraduate Course No. 4

Molecular Biology: Its Implications for Modern Medicine

October 27-28, 1965

The University of Chicago Center for Continuing Education,
1307 East 60th Street, Chicago 37, Illinois

Director: Wright Adams, M.D., F.A.C.P.

Planning Committee: Wright Adams, M.D., F.A.C.P., Chairman; Professor of Medicine, Associate Dean of Biological Sciences, University of Chicago; Hugh R. Butt, M.D., F.A.C.P., Professor of Medicine, Mayo Foundation, Rochester, Minn.; Leon O. Jacobson, M.D., F.A.C.P., Professor of Medicine; Chairman, Department of Medicine, University of Chicago; Theodore N. Pullman, M.D., Associate Professor, Department of Medicine, University of Chicago; Murray Rabinowitz, M.D., Associate Professor, Departments of Medicine and Biochemistry, University of Chicago; Donald F. Steiner, M.D., Assistant Professor, Department of Biochemistry, University of Chicago; Hewson H. Swift, Ph.D., Professor, Department of Zoology, University of Chicago; and Ira G. Wool, M.D., Professor, Department of Physiology, University of Chicago.

Fees: A.C.P. Members, $60; Nonmembers, $100.

Minimal Registration: 60; Maximal Registration: 200.

Note: Registration forms and requests for information are to be directed to: Edward C. Rosenow, Jr., M.D., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pa., 19104.

Summary of Course:

The planning for this course was initiated several years by the Postgraduate Course Committee of the American College of Physicians who assigned the selection of subjects to be covered and speakers to the planning committee, composed of internists and authorities in the field of molecular biology. Knowledge of molecular biology is rapidly becoming necessary for the progressive internist. Within a few years an understanding of the fundamental principles to be presented will be as essential for the internist as knowledge of electrocardiography and electrolyte balance is currently. Clinical thinking in molecular terms will be a prime requirement in modern medicine in both diagnosis and treatment.

The faculty has been carefully selected on two grounds. They are outstanding authorities in their fields and they all have the ability to project their complex subjects in a way which is understandable to internists.

The subject matter concerns an essential process in all bilogical systems—protein synthesis—its subcellular structure, function and regulation. A general summary of the course and its implications for modern medicine will be given at the completion of the lectures. The course is planned to allow time for questions and discussions.

The course will be held at the University of Chicago's new Center for Continuing Education on the University campus. This building has 119 twin bedrooms and has facilities for dining and cocktails. Further information will be forwarded upon confirmation of registration.

22ND ANNUAL NEW ENGLAND POSTGRADUATE ASSEMBLY

November 3-5, 1965

Statler Hilton Hotel, Boston, Mass.
Registration fee $15

Panels on: Surgical Emergencies, Medical Emergenies, Medical vs. Surgical Jaundice, Nutritional Aspects in the Prevention of Vascular Disease, Problems of Hemostasis, Problems of Peptic Ulcer, The Tranquilizers—their Value and Dangers, Psychiatry, Chronic Rheumatoid Arthritis—Complications and their Management, Pyelonephritis, Chronic Obstructive Lung Disease.

Symposium on Trauma—"What's New in the Old Field." CPC—by Massachusetts General Hospital.

Luncheon Speakers—Diets, Hyperparathyroidism, Medical Talks—the Transmitter and the Receiver.

Lectures: "Weakness and Easy Fatiguability," "Human Chromosomal Studies," "Newer Technique in Conception Control," "Recent Progress in the Diagnosis and Treatment of Syphilis & Gonorrhea," "The Coronary Prone Individual," "Functional Gastrointestinal Disease," "Late Radiation Effects in the Populations of Hiroshima & Nagasaki," "Office Management of Esophageal Disorders," "New Penicillin," "Diabetes," "Neurological Abnormalities Associated with Malignant Disease," "A Look into the Future—the Role of Computers in Small Hospitals."

Wednesday Evening: How to Live with MEDICARE.

For Advance Program write to: Mr. Getty Page, Secretary, Council of the N.E. State Medical Societies, 128 Merchants Row, Rutland, Vermont 05701.

THE AMERICAN COLLEGE OF PHYSICIANS

presents Postgraduate Course No. 5

PSYCHIATRY FOR THE INTERNIST

November 1-5, 1965

University of Colorado School of Medicine
4200 East Ninth Avenue, Denver, Colorado

Director: Herbert S. Gaskill, M.D., F.A.C.P.

Fees: A.C.P. Members, $60; Nonmembers, $100.

Minimal Registration, 15; Maximal Registration, 20.

Note: Registration forms and requests for information are to be directed to : Edward C. Rosenow, Jr., M.D., American College of Physicians, 4200 Pine Street, Philadelphia, Pa., 19104.

Summary of Course: This is an intensive course primarily related to the psychiatric problems commonly seen by the internist. Seminars on personality development, psychiatric interviewing and diagnostic evaluation, psychotherapeutic techniques for the internist and the use of drugs in the management of the psychiatric patient will alternate with opportunities for the clinical application of the theoretic insights, under individual supervision.

Hotel Accommodations: Cherry Creek Inn, 600 South Colorado Blvd., Denver Colo., Mr. Marwan Jalili, Asst. Manager. Single rooms, $11.50; twin-bedded rooms, $15.00 .

When writing for reservations, please identify yourself with the College and with this particular course.

Guest Speaker: Bernard C. Holland, M.D., Chariman, Department of Psychiatry, Emory University.

THE AMERICAN COLLEGE OF PHYSICIANS

Postgraduate Course No. 6

Review of Advances in Internal Medicine

November 8-12, 1965

Maimonides Hospital of Brooklyn affiliated with
State University of New York Downstate Medical Center
College of Medicine

Meeting Place: Kronish Auditorium, Maimonides Hospital of Brooklyn, 4802 Tenth Avenue, Brooklyn 19, New York.

Director: David Grob, M.D., F.A.C.P.

Co-Director: Ernst Greif, M.D.

Minimal Registration: 40, Maximal Registration: 140.

Fees: A.C.P. Members, $60; Non-members, $100.

Note: Registration forms and requests for information are to be directed to: Edward C. Rosenow, Jr., M.D., Executive Director, The American College of Physicians, 4200 Pine Street, Philadelphia, Pa., 19104.

Summary of Course: The purpose of this course is to review for the internist newer developments in selected subspecialty areas of medicine. Topics have been selected in which concepts of pathologic physiology or management are undergoing change, and faculty selected whose experience enables cogent presentation of these concepts. Recent advances will be presented in the diagnosis and management of heart block and arrhythmias, hypertension, infections, hemolytic anemias, renal failure, diabetes mellitus, disorders of bone metabolism, disorders of intestinal motility and absorption, hepatic dysfunction, and diseases of muscle. New principles important in practice will be emphasized. Demonstration of new procedures will be included. Presentation of each subject will be followed by a panel discussion and question and answer period. The course will conclude wtih presentation of interesting diagnostic problems, with tandem clinical-pathological discussion.

Hotel Accommodations: Statler-Hilton, 7th Avenue at 32nd St., New York 1, N. Y., Mr. Vincent Bauza, Convention Manager. Single rooms, 8:00 to $18; Twin-bedded rooms, $15.00 to $25.00. When writing for reservations, please identify yourself with the College, and with this particular course.

Transportation: Between Statler-Hilton Hotel and Maimonides Hospital will be provided daily.

Social Functions: Reception and cocktail hour for faculty, registrants and wives, 5 P.M., November 8, 1965, in Maimonides Hall.

MOUND PARK HOSPITAL FOUNDATION, INC.

701 Sixth Street South
St. Petersburg, Florida 33701

November 11, 12, and 13, 1965

Symposium on Cerebral Palsy: Modern Concepts—Allied Disorders, Rehabilitation. Mound Park Hospital Foundation, Department of Medical Education of the Mound Park Hospital, American Legion Children's Hospital, Selama Grotto Cerebral Palsy Endowment, Inc.—November 11, 12 and 13, 1965. The Foundation reserves the right to limit registration. By special arrangement—Registration Fee, $5.00. 18 Accredited Hours by the American Academy of General Practice. Address—Cerebral Palsy, Mound Park Hospital Foundation, Inc., St. Petersburg, Florida 33701.

PROBLEMS OF AGING SYMPOSIUM

November 17, 1965

The Rehabilitation Center of Southern Fairfield County, Inc. located in Stamford announces that as part of the V.R.A. Project No. 1348-G-64 currently being carried on in Southern Fairfield County, a Symposium dealing with a constructive approach to the problems of aging, will be presented on Wednesday, November 17, 1965, at 3:00 P.M.

Among those taking part in the symposium will be:

Dr. C. Louis Fincke of Stamford; Dr. John Heller of the New England Institute of Medical Research in Ridgefield; Mother Superior Bernadette of St. Joseph's Manor in Trumbull, Connecticut and Dr. Hans Kraus of New York City.

NEW HAVEN HEART ASSOCIATION

November 16, 1965

The chances for a cardiac patient to return to work will be analyzed in panel talks sponsored by the West Haven Heart Association and several cooperating agencies. The program will be presented at 3 p.m., November 16th at the New Haven Lawn Club, 193 Whitney Avenue, New Haven.

The symposium will present representatives from medicine, labor, personnel management and state government.

Serge Neprash, traffic coordinator at Armstrong Rubber Co. and chairman of the program, explained that the session is designed to examine the heart patient's ability to work and the methods of treatment needed for long-term productivity.

Cooperating agencies will include the New Haven Personnel Managers Association, Connecticut Association of Industrial Nurses, Connecticut Industrial Medical Association and the Connecticut Safety Society.

Panelists will include Dr. Allan B. Ainley, assistant medical director of Travelers Insurance Co., Hartford, and director of the Cardiovascular Work Evaluation Unit sponsored by the Hartford Heart Association.

Others will be Dr. Robert Butler of the Industrial Medical Association, medical director at Scovill Manufacturing Co. in Waterbury; Harry Koletsky, workmen's compensation commissioner; and M. A. Ruppolo, president and business representative of Truck Drivers 'and Chauffeurs' Union, Local 443.

Vice chairman for the program is Dr. Robert Brubaker, Olin medical director in New Haven.

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Many types of edema involving retention of salt and water.
Contraindications
Hypersensitivity, and most cases of severe renal or hepatic disease.
Precautions
Reduce dosage of concomitant antihypertensive agents by at least one-half. Discontinue if the BUN rises or liver dysfunction is aggravated. Electrolyte imbalance and potassium depletion may occur; take special care in cirrhosis or severe ischemic heart disease, and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended.
Side Effects
Constipation, dizziness, dysuria, headache, hyperglycemia, hyperuricemia, leukopenia, muscle cramps, nausea, purpura, thrombocytopenia, transient myopia, urticaria, vomiting and weakness.
Average Dosage
One tablet (100 mg.) daily with breakfast.
Availability
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ST. FRANCIS HOSPITAL PEDIATRIC SYMPOSIUM

Hartford, Connecticut

Wednesday, November 17th, 1965

10:00 A.M.—"PREMATURE INFANT FEEDING"
Hans G. Keitel, M.D., Jefferson Medical College, Philadelphia, Pennsylvania

2:00 P.M.—"ANTIBIOTIC THERAPY IN PEDIATRICS"
John W. Abbuhl, M.D., Albany Medical College, Albany, New York

Thursday, November 18th, 1965

10:00 A.M.—"ABDOMINAL PAIN IN CHILDHOOD"
Lewis M. Fraad, M.D., Albert Einstein College of Medicine, New York, New York

2:00 P.M.—"NEUROLOGICAL DIAGNOSIS BY INSPECTION"
Arnold P. Gold, M.D., Columbia University, College of Physicians and Surgeons, New York, New York

All meetings will be held in the St. Francis Hospital Amphitheater. For registration information please write to: Department of Medical Education, St. Francis Hospital, Hartford, Connecticut.

Doctor's Office

Claude A. Blaine, M.D., announces the opening of an office for the practice of ear, nose, throat and maxillo facial surgery at 175 Grove Street, Waterbury.

Herbert Goldenring, M. D., announces his association with Marshall Rosenbloom, M.D. in the practice of pediatrics, pediatric allergy and adolescent medicine at 62 Kirkham Street, Branford.

Harry R. Kormos, M.D., announces the opening of an office for the practice of psychiatry at 143 Main Street, Westport.

Seymour Manzon, M.D., announces the opening of an office for the practice of urology at 459 Valley Street, Willimantic.

Paul F. McAlenney, M.D., announces the removal of his office to 2 Church Street South, New Haven.

Patrick H. McDonagh, M.D., announces the opening of an office for the practice of psychiatry at 2715 Main Street, Bridgeport.

B. Joseph Meehan, M.D., announces the opening of an office for the practice of internal medicine on the Danbury-Newtown Road, Newtown.

James P. Roach, M.D., announces his association with Dr. Sidney H. Beck in the practice of urology at 881 Lafayette Street, Bridgeport.

Paul Kenneth Schick, M.D., announces the opening of an office for the practice of internal medicine at 342 Main Street, Manchester.

THE TEN COMMANDMENTS For *The Prevention Of Alcoholic Addiction*

TO ENJOY ALCOHOL SAFELY:

1. NEVER take a drink when you "NEED" one.
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3. DILUTE drinks—never on the rocks.
4. Keep accurate record of amount and number of drinks. Never drink every day.
5. Do not minimize the amount you drink. Instead, exaggerate it. If you say you drink twice as much as you think you do, this will probably be nearly accurate.
6. Do not drink on an empty stomach.
7. No signal drinking such as "luncheon," "Left office," "on the way home," "before dinner," "before bed," "meeting people," "celebrating," and "to get me through."
8. Tired or tense? Soak in a hot tub.
9. Never drink to escape discomfort.
10. Never drink in the morning.

William B. Terhune, M.D.
New Canaan, Connecticut

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NEW BOOKS IN REVIEW

CONGENITAL MALFORMATIONS. Papers and Discussions Presented at the Second International Conference on Congenital Malformations, New York City, July 14-19, 1963. Compiled and Edited by the International Medical Congress, Ltd., 120 Broadway, New York, 1964, 442 pp., Illustrated. Price not specified.

Reviewed by: LOUIS H. NAHUM

A symposium used to be a forum for discussing ideas and personal experiences. Now it is a conference at which people report on their work and discussion which follows clarifies thinking and lays bare the unsolved problems now recognized, the answers to which will form the basis for the next symposium.

In this particular conference there were 1,200 scientists in attendance. The latest work on cytogenetics, genetic variations in proteins and gene actions in relation to differentiation and developmental mechanisms were dealt with. There were also extrinsic factors in congenital human defects covered as well as epidemiologic studies. Finally, a thorough discussion of the management of human congenital defects was also covered. Obviously all these should lead to genetic counselling which is well covered and should be read by every physician.

Much space is spent on prevention of anomalies, postnatal prevention and correction of congenital defects.

As we go over these problems we find that those formerly due to poor obstetrics such as tracheal palsy, intracranial hemorrhage, brain damage and evulsion of the spinal cord are much less in evidence. However, the problem is immense because congenital babies fill most of our hospitals and mental deficiency makes the problem much greater. The burden imposed on family and community is great and prolonged.

What we need to know more of is physiological changes in the transition phase from intra-uterine to extra-uterine life. How to control damage that drugs might induce. We must look for new virus infections as well as Rubella that may cause congenital anomalies. We must promote greater triumphs by the surgeon. And why not the reshuffling of amino acids.

All of these problems and more are dealt with in this symposium. It makes fascinating reading in a new growing and tremendously important field.

"AUTOREGULATION OF BLOOD FLOW," edited by Paul C. Johnson, Ph.D., Proceedings of an International Symposium held June 10-12, 1963, Indianapolis. AHA Mon. No. Eight, American Heart Association, New York, 1964, 291 pp. $3.00.

Reviewed by: HERBERT LEVINE

This monograph consists of over forty contribtuions presented at a three-day symposium on autoregulation of blood flow held at Indiana University Medical Center in June, 1963. In his introduction Johnson defines autoregulation of blood flow as the intrinsic tendency of an organ to maintain constant blood flow despite changes in arterial perfusion pressure. This relatively restricted definition as only a part of homeostatic regulation of blood flow is adhered to throughout the volume.

Autoregulation has been observed in experimental animals in kidney, skeletal muscle, brain, intestine, myocardium, and liver. There is also some evidence that it occurs in the brain and kidney of man. Most of the studies described have involved pressure-flow experiments, although in some instances direct observation of the vasculature has been used. The evidence for autoregulation usually takes the form of a disproportion between increase in pressure and the resulting increase of flow under steady state conditions. Teleologically, this can be considered as a mechanism for maintaining nutrient flow of capillary pressure when arterial pressure is reduced locally.

The bulk of this volume consists of detailed reports of experimental demonstrations of autoregulation, and a discussion of the three major hypotheses offered in explanation of the phenomenon. The tissue pressure hypotesis attributes autoregulation in low pressure vessels to the pressure of surrounding tissue fluid on them. The metabolic hypothesis assumes that a decrease in blood flow causes vascular relaxation by accumulation of vasodilator metabolites in the tissue or by decreased nutrient supply. The myogenic hypothesis postulates a mechanism intrinsic in the smooth muscle cells of arteries which responds to an increase in internal pressure by contraction. This last seems to be the most popular among the authors represented.

This book contains little material of a clinical nature, but will be of great interest to the physiologist and to the physician concerned with the basic physiology of vascular regulation.

THE MANAGEMENT OF FRACTURES AND SOFT TISSUE INJURIES. Second Edition. By the Committee on Trauma of the American College of Surgeons. The W. B. Saunders Company, Philadelphia, Pennsylvania, 1965. 365 pp. Illustrated. $7.50.

Reviewed by: DENIS S. O'CONNOR

This issue on "Fractures and Soft Tissue Injuries" is an outgrowth of the "Primer on Fractures" which was published by the Fracture Committee which was the antecedent of the Committee on Trauma.

The recognition of the wide field of trauma is significant in that fractures are now properly regarded as a segment of the wider field and it naturally follows that trauma is a field of general surgery if not a matter of concern to every practicing physician.

The recent public criticism of a physician and his subsequent discipline by his medical society because of his refusal to render aid to a man who came to his office after sustaining a gunshot would point up the necessity of every physician regardless of his specialty to be able and willing to render emergency aid to the injured.

This handbook of convenient size for pocket transportation is as complete a tool for the purpose intended as could be found and it remains for the hospital educational directors to see that its maximum usefulness in training our newly graduated physicians is developed.

For it is in the emergency rooms of our hospitals that we must train our doctors in sound approaches to the care of all injuries. But only by repetitive application of the specific measures outlined in this volume can the physician be enabled to automatically carry out the step by step life-saving procedures so soundly set forth in this book.

If our highly developed hospital educational programs are to justify their expensive costs they must meet the high standards of our medical schools subsequent to the graduation of our students.

There is probably no more faulty training of our young physicians than in our hospital emergency rooms.

Not only should each young physician assigned to emergency room coverage be obliged to have a copy of this book in his pocket while on duty but it should be the duty of the educational director to see that his knowledge and grasp of the contents of the book is tested by frequent and unscheduled quizzes.

It could well be that by the enthusiastic use of this book in the hospital training program we may eventually have every physician qualified to render intelligent care to the injured.

STRUCTURE AND FUNCTION OF HEART MUSCLE.

American Heart Association Monograph, Number Nine, Edited by John R. Evans, M.D., The American Heart Association, Inc., New York, 1964. 224 pp. Illustrated $3.00.

Reviewed by: ANTHONY C. NOTO

Cardiovascular disease continues to be the number one killer of Americans. This paper back volume edited by an Associate of the Department of Medicine of the University of Toronto reflects the latest thought on the heart. The monograph consists of the proceedings of a symposium held on February 14 and 15, 1964 in Toronto, Canada. Of the thirty-five contributors the majority, twenty, are internists and pharmacologists. Each presentation is supplemented with an adequate bibliography and is followed by a brief, interesting and stimulating discussion by other experts in the field. The discussion in turn is supported by pertinent bibliography. The work is divided into four sections, I. mechanism of muscular contraction, II. energy production and metabolic control, III. regulation of performance of the heart as an organ and IV. impulse transmission in heart muscle. Treatment of the subject ranges from the molecular architecture of isolated straited muscle as viewed through the electron miscroscope to observation in the physiology of the intact heart. The investigations are presented with the ultimate purpose of elucidating the mechanism of heart failure. The text succeeds in fulfilling its aims as stated by the editor, "To review established knowledge in the field, introduce and test new concepts, clarify areas of difference of opinion, and focus attention on important problems to be solved." Stating it briefly, this work in advanced basic science acquaints both physician and investigator at the frontier of knowledge of the heart with the latest news of the myocardium.

BOOKS RECEIVED

Books received for review are acknowledged in this department and such acknowledgement must be regarded as a sufficient return for the courtesy of the sender. Selection will be made for review in the interests of our readers and as space permits.

Management of Juvenile Diabetes Mellitus. By Howard S. Traisman, M.D. and Alvah L. Newcomb, M.D. The C. V. Mosby Company, St. Louis, Missouri, 1965. 147 pp. with 16 figures, including one color plate. $12.75.

Current Surgical Management III. A Book of Alternative Viewpoints on Controversial Surgical Problems. Editors: Edwin H. Ellison, M.D., Stanley R. Friesen, M.D., and John H. Mulholland, M.D. With Contributions by 104 Authorities. W. B. Saunders Company, Philadelphia and London, 1965. 519 pp., Illustrated. $11.50.

Handbook of Physical Medicine and Rehabilitation. Edited by: Frank H. Krusen, M.D. Assoc. Editors: Frederick J. Kottke, M.D. and Paul M. Ellwood, Jr., M.D. W. B. Saunders Company, Philadelphia and London, 1965. 725 pp. Illustrated. $16.50.

Medicine In Transition. By Iago Galdston. The University of Chicago Press, Chicago, Illinois. 1965. 220 pp., $5.95.

The Climate Is Hope. How They Triumphed Over Cancer. By Walter Sanford Ross. Prentice-Hall, Inc., Englewood Cliffs, N.J., 1965. 184 pp. $3.95.

Caries-Resistant Teeth. Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme and Maeve O'Connor. Little, Brown & Company, Boston, Mass., 1965. 338 pp. with 43 illustrations. $12.50.

Complement. Ciba Foundation Symposium. Edited by B. E. W. Wolstenholme and Julie Knight. Little, Brown & Company, Boston, Mass., 1965. 388 pp. with 50 illustrations. $12.50.

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MEDICAL NEWS

Physicians, Nurses Often Fail To Communicate

The nurse and the physician work side by side in the hospital but frequently fail to understand one another.

The ultimate loser in any failure of doctor-nurse communication is the patient. If, for example, the nurse does not fully comprehend a doctor's orders regarding a patient, the patient suffers. If a doctor does not understand the nursing hierarchy in a hospital, he may issue orders which by their very nature are difficult for the nursing staff to carry out—and again the patient suffers.

"Nurse-Physician Communications in the Hospital" was the subject of a special program yesterday at the 114th annual convention of the American Medical Association. Sponsor of the session was the AMA Committee on Nursing.

Communication difficulties appear to be related to the social structure of hospitals, said one of the speakers, Luther Christman, Ph.D., R.N., associate professor of nursing at the University of Michigan, Ann Arbor.

For instance, he said, vast educational differences exist between doctors and nurses. Training and education create vital differences in the way physicians and nurses see events in the hospital. In addition, the physician remains oriented to continued learning through postgraduate education, while the nurse's formal education usually stops the day she leaves training. In time, Dr. Christman added, the trend toward baccalaureate education and graduate training for nurses may reduce the educational gap.

As other critical areas of communication difficulty due to hospital social structure, he cited:

—The various and often highly specialized technical languages of subgroups in the hospital. Nurses may lack the training to understand a highly technical order, but may be hesitant to ask for clarification. "People do not like to admit they do not understand, particularly if the communicator is a superior . . . thus the physician may leave the ward believing he has communicated only to be chagrined, and perhaps irked, when he finds this is not the case." Dr. Christman noted the best trained nurses are often placed in administrative positions where they contribute least to doctor-nurse understanding.

—The differing career patterns of the two professions. Physicians are often self-employed and self-directing. Nurses are employees subject to control from the hospital medical staff, hospital administration, and nursing administration. If physicians assume that nurses have the same degree of self-direction as themselves, misunderstanding may result.

Socioeconomic class differences between members of the two professions. Physicians usually enjoy considerably larger incomes than nurses, permitting a different style of life that seldom brings them into social contact with members of the nursing staff. Also, physicians traditionally come from families with professional and business backgrounds while nurses most often come from working-class and lower-middle-class families; both groups take their social perspectives into training with them.

—Sex differences, since most physicians are men and most nurses women. Normal cultural patterns of presumed male dominance and superiority are probably in effect during doctor-nurse professional contacts.

—Clashes over power. The physician's accustomed position as a power unto himself in his office, and his intense preoccupation with the clinical problems of his patients in the hospital, may bring him into conflict with nurses when he is expected to share power in the complex organizational structure of the hospital.

The hospital social structure can be made to help rather than hinder communication, if doctors and nurses cooperate in changing it, Dr. Christman said.

Among changes he recommended to facilitate physician-nurse understanding:

—The employment of non-nursing personnel to perform non-professional administrative duties now being carried out by nurses, thus releasing many of the best educated nurses for patient care.

—Improve the salaries of nurses. Physicians could help improve the climate between themselves and nurses if they actively supported moves for better nursing salaries.

—Fostering of liaison committees between state medical societies and state nurses associations.

—Organizing joint clinical workshops on state or district levels.

—Sponsoring of joint research in improvement of patient care.

Also speaking on the program yesterday was Barbara Bates, M.D., Department of Medicine, University of Kentucky, Lexington.

Dr. Bates told of actual research done on the problem of nurse-physician communications by means of a questionnaire circulated to doctors and nurses in a university teaching hospital.

Each person receiving the questionnaire was asked to report specific incidents concerning the behavior of members of the other group, and how such incidents affected the patient.

Of the 839 replies received from nurses and the 475 from physicians, a total of 367 involved communication by either a doctor or nurse. Some incidents were examples of poor communication where the patient suffered, others were reported as illustrations of good doctor-nurse communication helping the patient.

Moderator of a reacting panel discussion was Edward G. Benz, R.N., director of nursing at Embreeville State Hospital, Embreeville, Pa.

Seamen's Free Care Not Necessary

Providing free medical and hospital care to American-flag merchant seamen is no longer an appropriate function of the federal government, says the Committee on Federal Medical Services of the American Medical Association.

A condensation of the committee' s"Background Report: Care of Merchant Seamen by the U. S. Public Health Service" appears in the current Journal of the AMA.

The AMA and the committee have recognized, the report said, "that the federal government has a legitimate responsibility to provide care or to assist in the financing of care for certain special groups within the general population (e.g., members of the armed forces and their dependents, veterans disabled in the service of the country, federal employees, and such wards of the government as the Indians on federal reservations). Seamen sailing under the American flag do not now appear to be legitimately categorized with these groups, however," the report said.

Free medical care for merchant seamen is under direction of the Division of Hospitals and Medical Care of the Bureau of Medical Services, U. S. Public Health Service.

Government medical care for seamen began in 1588, for men of the British Royal Navy, supported by a monthly deduction from pay. After the American Revolution, several states established marine hospital funds, and the federal Marine Hospital Service, precursor of the Public Health Service, was approved by Congress in 1798. The first permanent federal Marine Hospital, at Washington Point, Va., was purchased from Virginia in 1801.

"Most of the arguments for the continuation of this program assume that conditions which brought about the establishment of the Marine Hospital Service are still valid," the report said. "Today, however, American-flag vessels receive other federal aids; neither the shipping industry nor the attractions of a seafaring life are now so weak as to require this additional subsidy—provided to no other industry, no matter how much in need of help."

Modern prepayment and health insurance mechanisms make possible nationwide or even international medical protection for seamen, the report said.

"In fact, if the convenience of the seamen themselves be considered, an insurance or prepayment program would be more appropriate than one which requires hospitalization at one of the 12 hospitals administered by the Division of Hospitals and Medical Care."

The Division also provides outpatient service in 25 clinics in the U. S. and Puerto Rico, "but this is a vastly less effective means of outpatient care than is free-choice insurance," the report said.

The 12 general hospitals could be closed if merchant seamen were removed from their caseloads, the report said. Seamen constitute about two-thirds of the total caseload. The remainder are mainly federal employees and dependents eligible for care through other federal medical programs.

There is no medical reason why care of merchant seamen should be confined to these hospitals, the report said. "Neither does it appear likely that their dispersal will have a major effect on medical education or research generally."

Care of merchant seamen is a duty the PHS can assign to physicians who volunteer for a two-year tour of duty to fulfill their military service requirement. "Whether this is an appropriate way for physicians to meet their obligations to their country is a worthy question," the report said.

"The merchant seaman can no longer be considered by reason of his employment, automatically needy. The seafaring unions have negotiated significant wage raises since World War II," said the report.

Some still argue that this is a "public health" program, the report noted. Today, however, far more tourists enter and leave the country, serving as possible disease carriers, than do merchant seamen. "The quarantine services of the Public Health Service seem a much more appropriate mechanism for meeting this threat," the report said.

"This program is, basically, not a service to American seamen, but to American-flag fleets, with eligibility based not on the nationality of the sea-

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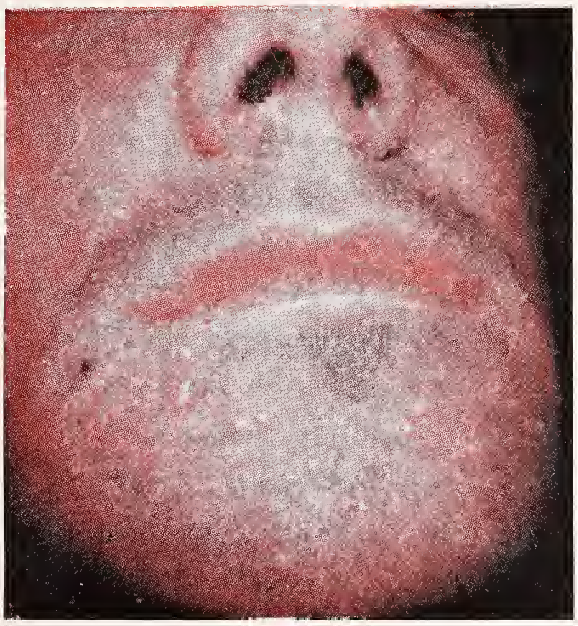

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man but on the flag under which he sails . . . Yet objections to cessation of the program do not come primarily from the shipowners, but from the seafaring unions."

The law of the sea makes a shipper responsible for "maintenance and cure" of any seaman in his employ if the seaman becomes disabled or ill during a voyage.

"Since the Public Health Service frequently provides the out-patient service and determines how long this 'maintenance and cure' payment continues, this presents the anomalous position of a federal health agency with a controlling role in a privately financed temporary disability payment program," said the report.

Hormone Stimulates Regrowth Of Hair

There may be some hope yet for the balding male, according to a report published recently by two physicians from the University of Pennsylvania School of Medicine.

By anointing hairless areas of the scalp with a mild solution of the male hormone testosterone, Christoper M. Papa, M.D., and Albert M. Kligman, M.D., Ph.D., have successfully rekindled a scraggly bit of hair growth in about three out of four men tested.

This, the physicians are quick to point out in an article in the current Journal of the American Medical Association, does not mean that testosterone ointments are a cure for baldness. Known side effects from the hormone, which can be absorbed through the skin, make it unsuitable for general use. Furthermore, the regrowth is far from luxuriant.

What the experiments so seem to indicate, they said, is that in the future it may be possible for the man predisposed to baldness to hang onto his hair.

Loss of hair, the researchers pointed out, stems from shrinkage of the hair follicles. As the follicle shrinks, so does the hair it produces.

Some follicles shrink into extinction. Others, however, retain some function, although their output may amount to a mere "downy filament" that takes strong light and magnification to detect.

Once gone a follicle cannot be restored. But where a follicle retains some function, even though its efforts are trivial, application of ointment containing testosterone appears to stimulate growth of a longer, thicker, darker hair.

The topical application of testosterone as a hair restorer, they pointed out, is a bit ironical. For it is basically this same hormone circulating in the body which is thought to account for the common pattern of baldness.

The explanation, they said, may be that when applied as an ointment to the surface of the skin, testosterone performs more in the nature of a drug and local stimulant than as a hormone.

In any event, Drs. Papa and Klingman made it clear that they presented their fiindings "with trepidation" in view of the futility of past experience in growing hair.

From the days of ancient Egypt when a mixture of crocodile, lion, hippopotamus and serpant fat was prescribed for baldness, to modern-day use of such things as diathermy and ultrasound, "the pattern has been one of promise and inevitable disappointment," they said.

"Despite manifold claims from legitimate and not so legitimate sources, no verified instance of hair regrowth of any type has ever been authenticated in common baldness. . . ."

"We know only too well that bald people grasp at hairs and cherish every fiber. They are ready to be gulled, deceived and deluded.

"We are fearful of the misinterpretation and misapplication of this work in the face of such intense feeling."

Although no adverse effects were noted among the group of 21 men who received daily applications of testosterone for five to twelve months, the physicians "strongly counsel against the indiscriminate use of testosterone."

"This is a potent hormone and its long-term use in an unsupervised population is to be condemned," they said adding:

"We do not regard that we have achieved a useful treatment for common baldness by topical administration of testosterone. The real significance of this research lies in its opening of a door for investigating the creation or discovery of other compounds which might have almost purely local effects.

"If topical applications are to acquire genuine usefulness in common baldness, the major emphasis must be in prophylaxis. There is every reason to believe that treatment in the early stages will be far more effective in arresting the process than the limited regrowth we have obtained in the late stage of denudation."

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Connecticut Medicine

editorials

Glomectomy

The ablation compulsion syndrome is the urge to remove physiologic mechanisms in the belief that this will cure something. Surgical tampering with physiologic mechanisms is an old idea. Centuries ago it was already practised in China in the form of acupuncture. More recently total removal of the thyroid and sometimes the parathyroid by accident was in vogue for treating angina pectoris and congestive heart failure. Then severing the cardiac sympathetics to avoid the pain of angina pectoris was proposed but it did not take hold because the pain was an important early warning signal without which disaster could threaten. Extirpation of the adrenal glands for hypertension also flashed in the sky and disappeared. Extirpation of the pituitary for Cushing's disease is a more recent addition to the list. Now we have carotid body resection in asthma as the most recent example of the ablation compulsion syndrome. Removal of the carotid body and the nerve plexus in this region which also supplies the carotid sinus is an easy matter. Apprently with some the decision to remove these structures is also an easy matter, in spite of the fact that the decision to remove an important physiologic mechanism should not be arrived at too quickly.

It is another matter to utilize the physiologic function of the carotid sinus in clinical medicine. It acts as a stabilizing agent to lower blood pressure when it goes up and to raise it when it falls. The stretch receptors in the carotid sinus can be mechanically stimulated by massaging it, in which case one can obtain slowing of the heart and fall in pressure. This simple maneuver has been utilized whenever vagal influences on the heart are required quickly as in atrial tachycardia. It is also a valuable procedure for quick relief during acute pulmonary edema by slowing the pulse and reducing the arterial pressure, both of which can contribute to acute left heart failure.[1, 5] But to destroy is another matter.

The role of the carotid body in respiration is considerably more complicated, because both the chemo-receptors in the carotid body and those in the vasomotor and respiratory center in the medulla are sensitive to CO_2 and O^2 lack. Eliminating a carotid body on one side will denervate the carotid sinus on this side as well as the carotid body, but it will in no way reduce the central affects of CO_2 excess or O_2 decline. Some have come to the view that the carotid body receptors might become oversensitive in asthma. In this disorder the reasoning goes, the airways are already compromised and the resulting rapid breathing may lead to further decrease in alveolar ventilation because of an oversensitized carotid body. Why then not remove one carotid body, break the "vicious cycle" and relieve your patient. If one didn't know that there are other bodies with chemo-receptors, one on the opposite side, one on the aorta and elsewhere, the idea could be attractive. But one would also have to forget that the respiratory center is much more sensitive to the same gases as are the chemo-receptors in the periphery. Obviously the theory of an over-sensitized carotid body in asthma would be almost impossible to prove.

THE COVER

JENNER: SMALLPOX IS STEMMED

THE first vaccination against smallpox was performed by Edward Jenner, English rural physician, in his apartment in the Chantry House, Berkeley, Gloucestershire. Exudate from a cowpox pustule on the hand of dairymaid Sara Nelmes was inserted into scratches on the arm of eight-year-old James Phipps, May 14, 1796. The vaccination was effective, for two later attempts to induce infection with smallpox were unsuccessful. Proving and reproving his discovery, Jenner published his vaccination findings in 1798. Despite opposition, vaccination became accepted practice during Jenner's lifetime.

The fact that Overholt's view that asthma is aggravated by sensitized carotid bodies is an unphysiologic concept, did not prevent its testing in practice. Both Nakayama[3] who was the first to operate on the carotid body in asthmatics and Overholt in this county reported "good" results in better than sixtyfour per cent of several thousand patients with asthma following glomectomy. However, it is astonishing how it is possible to obtain such apparently good results from an operation which leaves most of the chemo-receptors intact peripherally and all in the respiratory center.

It didn't take long for skeptics to arise like Segal[4] and others who made an honest trial of the operation but found only six patients improved out of a total of one hundred and eighty-one operated upon. He writes "the futility of removing only one source of afferent stimuli to the respiratory center, the inadvisability of disturbing an important chemo-receptor center and denervating an area involved also in maintaining blood pressure in health and disease should be appreciated by the surgeon contemplating glomectomy." He could also have reminded the surgeons that the respiratory center is much more sensitive to the blood gases than the peripheral chemo-receptors, and removing one of the latter could hardly have exercised any appreciable role in altering the rapid breathing in asthma.

When such contradictory results are reported by reputable surgeons one is led to speculate that perhaps they were each dealing with different types of patients. Asthma is known to occur in a variety of forms. Between the young woman in her twenties who has attacks once or twice a year and the older patient who is worn down by the persistence of the breathing difficulty there are many gradations. Before the results of any treatment can be properly appraised the kind of case and the probable exciting cause must be taken into account. It is reasonable to expect that the results would be different in different groups, and yet in the enthusiastic studies nothing is said about this point.

The second question is whether the carotid body operation is specific or whether any other operation would do just as well. Many operations on other parts of the body—on the paranasal sinuses, or teeth, or gall-bladder, or hernia have also brought relief to certain patients at least for a time. It is known that accidents with fractures or wounds have relieved asthma and so has pregnancy and parturition. Finally asthma is at times a reversible disease and there are patients who get well without any special treatment.

In short the case for glomectomy in asthma is based upon an unphysiologic procedure without due recognition to the complex mechanisms involved in the control of respiration and without any adequate controls. Glomectomy is a good example of the ablation-compulsion syndrome and doubtless is not the last of a long list of procedures tampering with important physiologic regulatory mechanisms that have taken eons of time to perfect for the benefit of health and homeostasis.

L.H.N.

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The "Emergency Room"

There is a rapidly growing use of the emergency facilities of a hospital, so much so that the facilities are in need of constant expansion. Formerly an emergency room was one to which only real emergencies were brought such as accidents with and without injuries, acute abdominal pain even if not caused by appendicitis or volvulus and possible myocardial infarctions. Now the "room" has expanded into a "department" with X-ray facilities, laboratory, nurses, doctors in several specialties, operating rooms, and services which are present only in a hospital.

The reason for this expansion is that emergency facilities today are no longer used only to treat acute accident victims. In fact, a wide variety of ambulatory and non-emergency patients come in streams daily and especially nightly. In fact the experience at the Genesee Hospital in Rochester is typical of what is occurring everywhere. Over the past few years they have experienced a ten per cent increase in the patient load each year. The analysis of the type of patients seen in a typical month, in this case January 1964, shows that at this three hundred bed hospital, two thousand three hundred and seventy-two patients were seen and treated in the emergency department and less than one in six was sick enough to be admitted to the hospital.

One of the most interesting parts of the analysis of this case load arose from the question of the necessity of the emergency department visit. Three

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categories were distinguished. One comprising one-third of all admissions in which there was no need for the advice of a physician or which could easily have waited twenty-four hours or longer for attention by their family doctor. It includes such complaints as a cold for two weeks, a sore foot for five days or even a request for a renewal of a prescription. Clearly it was an unnecessary burden on the facility and must have been a real tax on the patience of the attending staff.

Another third of the visits revealed conditions which by their nature could be seen before a twenty-four hour period elapsed but which did not need the immediate availability of the hospital facility. Examples of this category were sudden onset of fever in a child, a sprained ankle and various types of cuts and bruises.

Of the two thousand three hundred and seventy-two patients only about eight hundred could be considered emergencies. These were the patients, though perhaps not all serious, that should be seen immediately by a physician. The problem by its very nature is one that is apt to need the various hospital facilities that a family doctor does not and cannot offer. Examples of this type are accidents from automobile or otherwise even if no injuries are found later, acute abdominal pain even if caused by acute gastroenteritis, possible myocardial infarction, shock, hemorrhage, etc.

In short, only one-third of the patients seen were considered to be bona fide emergencies best seen and treated in a hospital facility. Approximately two-thirds of the patients had problems which could have been handled on the phone or by a clinic or office visit to their family doctor. If this trend continues and patients more and more seek the non-personal physician to handle his medical problems, it will not be too long before we will be faced with institutional medicine, not because the government is foisting it upon the people but because people are seeking medical care away from their family doctor.

The hospital problem is of course different from the doctor's problem. The hospital has to plan expanded facilities to take care of the increasing load of patients. It will have to face the expensive necessity of expanding the facilities to accommodate for the present and future growing needs for "emergency" medical care. Physicians and administrators will have to determine whether the hospital will accept and care for non-emergencies and discourage them from coming. They may have to expand outpatient facilities, evening clinics to take care of the non-emergency. If the pressure of the public upon the emergency departments continue with two-third presenting for medical care with non-emergency problems, is this an early warning signal of the growing acceptance of the non-personal physician by the public.

The doctor's problem is to determine what it is that has given momentum to the movement by the public away from the personal physician. To be sure it is still a miniscule movement but it is gaining momentum yearly. The reasons are many and no simple answers are sufficient to explain this trend. Patients of course are learning that physicians are available at the hospital emergency department twenty-four hours a day and what is more, that they can receive very adequate care there. There are many situations in which families have just moved to town and need medical care before they learn of a family physician to whom they can turn to for help.

There are some patients who do not want to bother their doctor for relatively minor complaints. This attitude may be due in part to the feeling that the specialist who treated them a short time ago is not interested in their total health problem or that he does not wish to accept responsibility for a patient's problem outside of his own field of interest. This is understandable because many physicians are becoming specialists and arrange office hours by appointment only, sometimes days or weeks in advance. This forecloses the possibility for a patient with an unexpected problem to be seen promptly. But it does more, it leads many physicians to refer patients to the emergency department of a hospital where multiple diagnostic facilities are readily available along with the personnel to do these services.

Not the least of the causes of the movement toward the emergency departments is the cost factor. Many people often feel, and at times mistakenly, that the cost of hospital emergency care is lower than the cost of the same care given by their own physicians. Many insurance plans cover emergency department visits whereas they do not cover office visits or house calls. Here the economic factor works to erode the personal relationship that is so important between patient and his doctor.

The fact that two-thirds of the patients seen in the emergency "room" could have been treated in a doctor's office but were not, should give us pause and force us to think through the serious social implications of this phenomenon and the part we unwittingly play in the momentum toward institutional medicine.

L.H.N.

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The Computer And Personality Inventory

For decades the family physician has been aware of the large psychiatric or psychological component in his medical patients. The majority of problems presented to him it is believed are a complex mixture of psychologic, sociologic, as well as physiologic disturbances. In fact the family physician is bearing the main load of treating the very numerous cases of minor mental illness and neuroses in the community but with what success no one can judge. What the physician specifically lacks, however, is a fund of patient giving information necessary for his proper evaluation of emotional conflict of possible major psychological problems. Without it he will be poorly equipped to deal with problems of psychiatric patients.

Usually this information is available only to the psychiatric specialties and the physician or internist has neither the time nor the inclination to obtain or organize the information necessary for the evaluation of these problems. Gradually there develops a tendency for the individual patient as a person to take second place in interest and concern compared with, for example, his cardiovascular system or hematopoietic system. For the doctor to learn that important aspect of medicine, the realities of the doctor-patient relationship and the emotional impact of the psychologically sick person he must have a way of better understanding the personality structure of his patients.

An attempt to furnish this type of information has been made through the Minnesota Multiphasic Personality Inventory (MMPI). This embodies a series of 550 behavioral descriptive statements to which the patient responds true or false. The responses are then grouped into several general categories. Then they are compared with the responses of large numbers of "normal" individuals as well as with those having psychiatric disorders. The test is scored on a total of 14 keys or scales including general physical health, occupational interest, social attitudes, preoccupations, and phobias. Some of the scales are measures of "test-taking" attitudes and seem to do a reasonably good job in detecting conscious lying, general defensiveness, malingering, mental confusion and poor reading ability.

The MMPI has now been used for a number of years in the Section of Psychiatry at the Mayo Clinic as part of a battery of tests for psychological assessment. Before the era of the computer, mechanical scoring of this inventor usually took about 45 minutes of a clerk typist's time. Once the test was scored, then a clinical psychologist dictated a narrative description of the patient's salient personality characteristics.

Over 90 per cent of the patients were willing to take this test in the course of a general medical examination. The remainder took it passively while only two in a thousand refused to complete it. The patients considered it a part of the physical examination as they would any other test. However, the test was always given to the patient by a physician and never in a classroom type of environment. The interpretations depended on the past academic training of the psychologist in the use of the MMPI as well as his cumulative experience in the practical situation. This interpretation phase usually took a half hour. This of course involved some inefficiency and therefore the test was modified so that it could be fed directly into an electronic computer. No desk or blackboard is required and the patient is able with the use of an electrographic pencil to complete the test in approximately one-half hour or less.

The computer was programmed to score the test on the basis of the 14 basic scales. The idea of course was to develop a series of behavioral descriptive statements which would characterize various types of elevations or depressions of each of the several MMPI scales. There is a behavioral descriptive statement for the depression scale and others. Subsequent to scoring the machine can select from this statement library those specific phrases that apply to the individual patient. The information is available to the internist within 24 hours after the patient reports for examination, in the form of a summary personality description.

From the beginning there were obstacles. The physician's limited knowledge of psychological terms made it necessary for the personality description to be written in completely non-psychological terminology. In the print-out, one finds no diagnostic labels or psychiatric terms in emotion laden words like schizophrenia or psychopathic personality. For example, if the schizophrenic scale is moderately elevated, the print-out from the computer may read "probably somewhat eccentric, seclusive and withdrawn, many internal conflicts."

The evaluation in 1963 of all medical consultants who used the MMPI for more than four months is interesting. Two-thirds believed that the test procedure reinforces confidence in the clinical evaluation, revealed emotional problems and helped in recognizing the borderline patient.

The investigators have now collected 50,000 records which will be subjected to detailed analyses. Out of such material should come the differences of individual profiles according to age groups, relation of sex to tension, personality characteristics of individuals with specific types of diseases. Does a physical disease, as for example rheumatoid arthri-

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tis or coronary heart disease, significantly alter the individual profile? What is the incidence of neuroses and psychoses and other personality traits in the general population? Obviously the researchers struck a rich lode of ore to mine for a long time.

As far as the physician is concerned, he will soon be in possession of knowledge for recognizing the key traits of personality in health and disease the better to be able to deal with them.

L.H.N.

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Screening For Glaucoma

In the present stage of our knowledge, glaucoma cannot be prevented, but the blindness resulting from it can be, if the diagnosis is made before irreparable loss of vision occurs. Since glaucoma is the second ranking cause of blindness in this country we should seek to identify those who have the disease in the early stages and who are likely candidates for blindness if allowed to go undetected. A relatively simple instrument, the Schiotz tonometer, is available to identify those who have the disease in the early stages.

These circumstances have led to increasing popularity of "G" days sponsored by Lions Clubs and of efforts to systematically test office, clinic or hospital patients, industrial employees and other population groups for glaucoma. The basic purpose of these programs is to separate from a large group of persons without overt symptoms of glaucoma those who have a high probability of having the disease so that they can be referred to ophthalmologists for complete diagnostic evaluations and put under treatment if necessary.

Any test that is specific should be able to give a negative finding when the person tested for the disease is free of the disease. The difficulty arises when a test gives too many false negatives or too many false positives. A study of the pressure readings in the eyes of a large group of patients at the glaucoma detection service in the outpatient department of the City of Memphis Hospital has just been released which throws some light upon the sensitivity of any intraocular pressure in revealing the presence or absence of glaucoma.[1] They found that it was not possible to select any intra-ocular pressure in screening for glaucoma which would be positive in all persons with the disease and negative in those without the disease.

A common screening level used in mass glaucoma surveys and office screening in the past has been 25 mm Hg with the Schiotz-tonometer. If this level is used without regard to the age of the patient, then an average prevalence rate of 2 per cent in persons over 40 years of age has been widely quoted. Packer however subjected many of his patients with an intraocular pressure below 25 mm Hg to a complete examination and found many to have glaucoma so that his reported incidence is really 4.1 per cent in a combined group of healthy patients and those sick from other causes. Analyzing his figures more carefully he found that if 21.9 mm Hg were used as a screening level many more cases of incipient glaucoma would come to light.

When Packer divided his population into those under and those over 55 years of age then a pressure below 21.9 mm Hg virtually eliminated all patients in the younger age category from suspicion of glaucoma. In patients over 55, 21.9 mm Hg pressure was not such a sensitive dividing line because it eliminated but 68 per cent from suspicion of glaucoma.

It is clear however that the nature of the population studied is important particularly with regard to the age of the patient. But one must remember that the criteria employed in establishing the diagnosis of glaucoma will also influence the screening level pressure one must use to further investigate the existence of glaucoma. In Packer's report in patients over 55 a screening level intraocular pressure of 18.5 mm Hg would have been required to discover all the cases of glaucoma in this group.

How can one improve the yield of positive cases in the older age category at feasible screening levels? This requires further investigation. Perhaps a provocative test of some type might expose the incipient glaucoma cases in the older age group.

L.H.N.

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Dangers Of Hypnosis

The hypnotic trance is a virtually benign condition. But there are dangers lurking everywhere, both unknown as yet and already known. Anxiety reactions and various psychosomatic disturbances have been seen in response to the induction process alone. There are dangers of adverse responses to specific types of suggestion. There are dangers of precipitating a psychiatric illness especially in a schizophrenic with paranoid states. Homosexual panics have been provoked. Certain healthy subjects in experimental studies who had a past history of a traumatic experience have shown the appearance of post-hypnotic psychosomatic symptoms.

As experience has accumulated instances have been uncovered in which an existing disorder has been made worse by intensifying schizophrenic symptomatology. Certain depressed patients have become suicidal after hypnotic intervention especially as the somatic component is suggested away. Even in simple hysteria a premature or unsophisticated threat to the symptom may be profoundly disrupting and precipitate a more serious condition. Especially can the inexpert use of hypnosis and drugs be highly unpredictable.

Hypnosis may cause recrudescence of symptoms in a patient whose illness is in a remission or improving. A schizophrenic with tenuous adjustment may be thrown into a relapse with severe psychopathology. Hypnosis may also prolong illness especially in the passive-dependent and hysterical character disorders underlying the presenting symptom.

There are other dangers cited by West and Deckert.[1] There are dangers of superficial relief, which many experience, while overlooking psychiatric or physical illness which progresses undetected. One patient is cited with a glioblastoma who got temporary relief from headache through hypnosis. Excessive dependency can occur very quickly in hypnosis. There are dangers of sexual seduction and danger of criminal activity.

The dangers to medicine are almost self-evident. Unsophisticated employment may lead to some dramatic failures that can only reflect adversely upon psychotherapy in general. But there are also dangers in success with hypnotherapy since this could lead to complacency or carelessness. Successes can lead to magically unrealistic public expectation of quick sweeping therapeutic triumphs. As in other areas cures may be widely heralded, failures ignored. Patients undergoing laborious prolonged and expensive orthodox psychoanalysis or intense psychotherapy may turn restive or even decamp.

West and Deckert point out that hypnotically skilled non-physicians recently have been collaborating more and more with the general practitioners and specialist in obstetrics, anesthesiology and surgery. This development may lead to the likelihood of the hypnotist's becoming rapidly accepted as a defacto psychiatrist. This kind of process ultimately would be to the detriment of the patient and to the discredit of psychiatry as a specialty and medicine as a profession.

When a movement is expanding rapidly as is hypnosis since World War II two opposite tendencies are likely to arise. Insidious growth of cult-like conditions in which more and more extravagant claims will be made for it. This will inevitably give rise to a counter-movement of skepticism and rejection by physicians and those who study hypnosis will be in jeopardy of being termed "crack-pots."

We are therefore faced with the necessity to define more clearly the indications and contra-indications for hypnosis. We are in urgent need of basic research on such issues as hypnotizability, psychophysiology and psychodynamics of the hypnotic compared to non-hypnotic transactions. Whatever information about hypnosis that exists and will be discovered from future research ought to be incorporated into modern undergraduate medical education as a part of the basic course in psychiatry so that eventually every medical man will have some scientific knowledge of it. Since hypnosis is a technique of influencing human behavior, psychiatrists also need to have some understanding of it as well as some skill in its use. At present the medical graduate can become fully qualified as a psychiatrist with no experience or training in hypnosis whatsoever. In the psychoanalytical schools, Freud's abandonment of hypnosis has prevented any basic training in hypnotherapy. These problems unless urgently resolved makes the danger real that practitioners will enter the field of medical hypnosis inadequately or altogether untrained.

Clearly we must engage in continuing action for stricter legal containment of the use of hypnosis for entertainment or by amateurs for any reason or by lay healers, quacks and charlatans in their exploitation of the public. Hypnosis is a respectable discipline but it is also a very potent one. It should be employed by a trained physician within the scope of his usual practice and within the range of his special competence.[2, 3] At the same time hypnosis has serious limitations and we must avoid over commitment to it as a technique in psychotherapy no matter how skilled one becomes in its use.

West and Deckert urge that appropriate professional organizations should assume responsibilities for investigation in this field. Careful surveys of the known dangers of hypnosis together with their factual dispassionate and objective reporting of such results in the literature. In such investigations however new uses of the technique may become revealed. Meares[4] believes that "in the distant horizon" through suggestion it may be possible to give patients a sense of purpose and individual dignity, to help him fulfill his biological heritage of love and aggression to the benefit of both himself and

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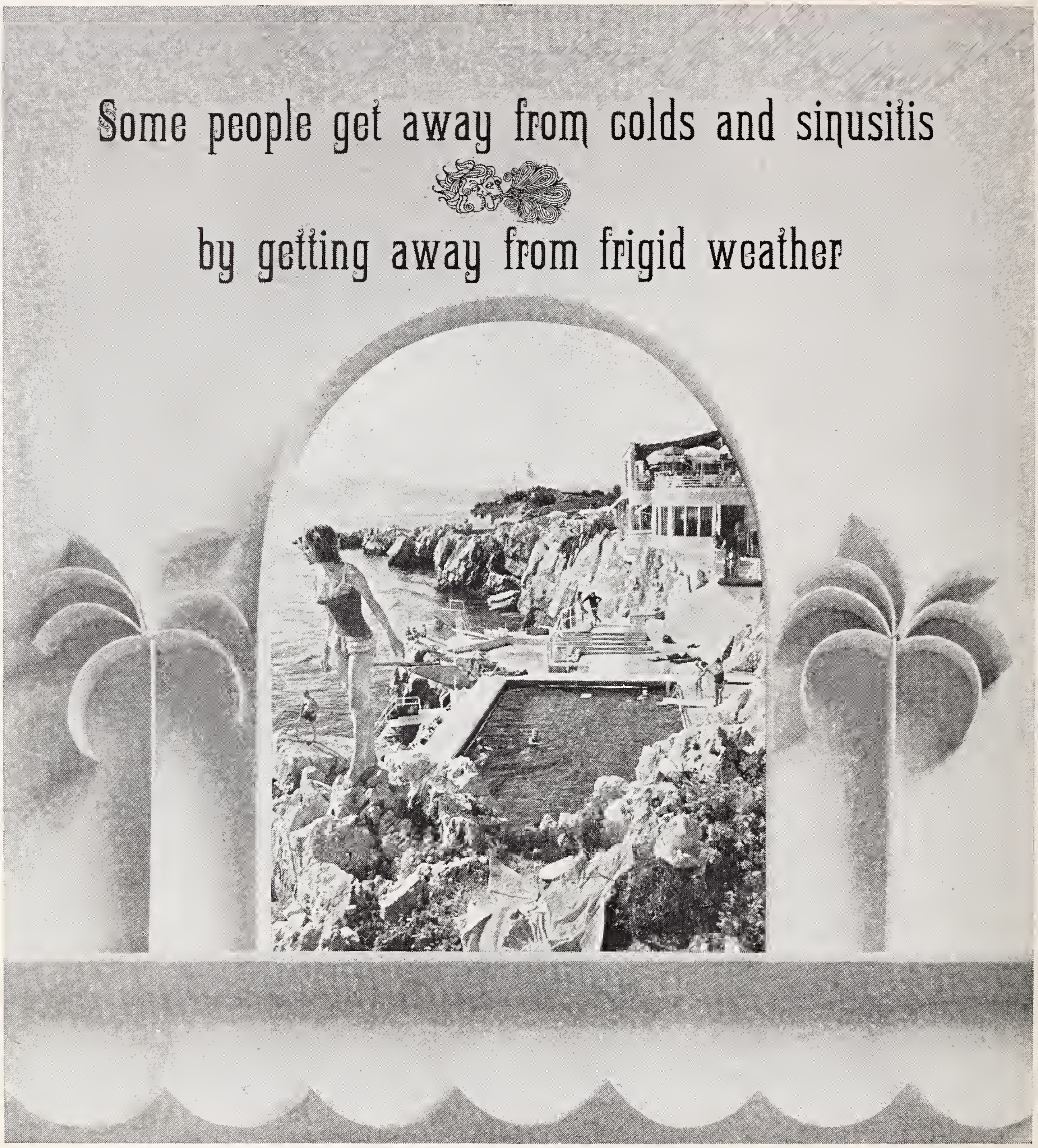
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those around him. The specialist who can do this with patients is also in the distant horizon.

L.H.N.

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Madness In The Recovery Room From Open-Heart Surgery Or "They Kept Waking Me Up"

Among the diseases of medical progress previously discussed one "Madness" in the recovery room was not considered. For one thing the report was compiled by medical men whose sights were on drugs, intravenous therapy, liver and renal biopsies, and bronchoscopy and gastroscopy. Then again surgeons rarely encountered patients with prolonged sleeplessness and anxiety post-operatively. Another reason was that the profession was not aware of the experiments on sleep and dream deprivation and the psychotic consequences[1] that result. As a consequence the profession was not alert to look for evidences of psychotic changes in their patients.

The whole problem of post-operative psychoses has come to the fore since open-heart surgery has become frequent and the patients after operation are brought to a recovery room where they are kept up to six days before transfer to their hospital bed. In this recovery room, the patients are kept close to each other, separated only by curtains. They are placed in a hissing oxygen tent. They are strapped down, as if chained, by wires attached to electrocardiographic electrodes. They have a monitor alongside, clicking with each heart beat. They have intravenous catheters and at times urethral catheters. The more extensive the operation, the more pain they suffer, especially since they are so immobolized and the less sleep they can get.

Every half hour or hour the nurse takes blood pressure readings and makes other observations. When another patient is in distress, attendants rush to his side to administer medications, an environment highly conducive to generation of anxiety and fear of death, since some patients in the recovery room actually do die. For one reason or another patients complain that "they kept waking me up." This allowed them to have a greater preoccupation with death and a reliving of their own most difficult moments every time a new patient is brought in from the operating room. In short the whole stay in the open-heart recovery room is a very disturbing experience seriously interfering with sleep.

If the patient is to develop a sleep and dream deprivation psychosis, he first begins to make some inappropriate remark. Then there is a gradual evolution beginning three to five days after operation. He might experience an illusion involving sounds arising from the air conditioning vent or a reflection of light from the plastic oxygen tent. Many experience a rocking or floating sensation. These then develop into hallucinatory phenomena. The patients become persistently or fleetingly disoriented in time, place or person. In short they manifest perceptual distortions, disorientation and paranoid ideation. The parallelism between these symptoms and those observed in experiments on normal persons deprived of sleep and dreaming is striking.[1, 2]

Kornfeld et al.[3] found a high incidence of this "madness," 38 per cent in 99 patients, but the incidence was probably much higher since many symptoms could have escaped detection by nurses. Others found an incidence of 41 per cent,[4] and still others 57 per cent.[5] One striking finding by all investigators was the apparent absence of delirium in children under 14 years of age. The reason for this is not known, but one can speculate that children have less anxiety, sleep better and do not lose dream cycles. But this could be answered positively only by careful study of sleep and dream loss in these patients. It is, however, clear beyond a doubt that environmental factors made prolonged uninterrupted sleep impossible in the adult patients in the open-heart recovery room.

It would not be justified to attribute the psychosis entirely to sleep and dream deprivation without a careful study of all pre-operative and operative, as well as post-operative factors. Kornfeld et al made a careful search in the patients with and those without delirium first as regards pre-operative factors. Neither age, sex, marital status, severity of illness and rheumatic heart disease were found to have a role in post-operative psychosis. Further the operative procedures such as duration of operation, by-pass time or hypothermia played no role. Among the post-operative factors analyzed, neither sedation, analgesia or metabolic factors such as hyponatremia and dehydration played a role since these were all carefully controlled.

If the surgery produced brain damage to account for the psychosis, it should have become apparent directly after recovery from the operation.[6] But these patients all had lucid periods for 2-3 days post-operative and showed no neurological deficit. Furthermore, all patients recovered from their psychosis, once they were removed from the recovery room and returned to their standard hospital environment so that they could catch up on their lost sleep.

These studies must have considerable impact on the planning of any intensive care unit. Doctors must be alert to allow their patients a maximum number of uninterrupted sleep and dream periods. The usual day-awake, night sleep cycle should be maintained whenever possible. This implies having a patient in a separate room with all noise and monitoring equipment outside. In a separate room the patient will be spared disturbances that come from dealing with other patients and not be made anxious by emergency procedures performed on other patients. If the signalling devices are outside, the patient will not be aware of the significance of these signalling devices and the danger implicit with any change in their pattern.

Above all, patients should be allowed increased mobility by removal of as many wires and tubes from their extremities as possible. This could probably be best achieved by telemetering equipment.

We have as yet no studies on "madness" in the intensive care units. Here the situation is very much similar to that found in the recovery room following open-heart surgery. Hissing oxygen tents, monitoring devices at the bedside, frequent disturbances from hourly blood pressure recording, nurses not alert to the vital need for uninterrupted sleep, and disturbances that come from distressed adjacent patients.

One thing, however, is clear. We must pay more attention to providing long periods of uninterrupted sleep for our patients, for sleep and dream deprivation leads to a psychosis which happily is reversible once recognized and the disturbing factors to sleep and dream removed.

Two apparently unrelated lines of investigations, one on dream deprivation, and one on psychoses in a recovery room, have converged to clarify a distressing complication in the recovery room from open-heart surgery and to help us plan a recovery room and an intensive care unit to avoid "madness" in the recovery room. In addition we have uncovered a new and important Disease of Medical Progress.

L.H.N.

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The Renin-Angiotensin-Aldosterone System (RAAS) Clinical Conditions With Increased Production Of Renin

During nephrosis, cirrhosis of the liver and congestive heart failure, there is an overproduction of aldosterone. Conn[1] terms this secondary aldosteronism as opposed to the type of aldosteronism caused by aldosterone secreting tumors of the adrenal cortex in which there is no edema and which he properly distinguished as primary aldosteronism. The secondary type of aldosteronism being induced by such diverse diseases mentioned above could not possibly represent a disease of the adrenal cortex, but must have been induced by a common aberration that led to increased aldosterone production by a stimulus outside the adrenal gland. What could this stimulus be?

Conn and his associates[1] have now established beyond question that when excessive secretion of aldosterone occurs in those conditions associated with edema it is accompanied by an increased release of renin by the kidney. In the three conditions mentioned above there is decreased effective blood volume and this is "sensed" by a decreased stretch of the afferent glomerular arteriole. This decreased stretch of the juxtaglomerular cells, is the result of diminished effective blood volume from decreased cardiac output in the case of the failing heart from transudation of fluid out of the vascular compartment in hypoproteinemia also arising in nephrosis. The result of reduced stretch of the afferent glomerular arteriole from whatever cause is accompanied by increased release of renin by the kidney which leads to increased amounts of angiotensin II and secondary overproduction of aldosterone.

Thus although secondary overproduction of aldosterone takes place its degree will depend on how much sodium ions reach the ion exchange site at the distal tubule where aldosterone acts. The sodium that does reach there is quickly absorbed thus contributing to the dynamic development of

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5%	30	16	10	4	0

*** Denotes resolution of at least 50%.*
** Denotes resolution up to 50%.*

DURATION OF TREATMENT

Number of Cases	14	24	18	14	9	3	7	4
Duration (weeks and months)	2 wks.	1 mo.	2 mos.	3 mos.	4 mos.	5 mos.	6 mos.	8 mos.

The types of psoriasis included (parentheses indicate number of cases); Generalized (31), Palms and soles (7), Legs and feet (18), Scalp and ears (27), Groin (3), Neck (5) and Vulva (2).

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the edematous state. This variable degree of secondary aldosteronism despite the gross overproduction of this steroid is the reason for the variable therapeutic responses observed in these states when the aldosterone antagonist spironolactone (Aldactone) is employed therapeutically.

Conn and his co-workers have been studying a most important and common clinical problem, Idiopathic Cyclic Edema in which secondary aldosteronism occurs. It is a clinical entity observed almost exclusively in females and is characterized by periodic and rapid retention of edema fluid and its subsequent loss. These patients whose cardiac hepatic and renal functions are normal have become emotionally unstable during the periods of edema. Their psychological difficulties mount to a point of being devastating to themselves and their families. Since they develop edema cyclically one would expect increased aldosterone secretion and this has been found to exist, but the trigger to overproduction of aldosterone, namely, renin activity, appears to be quite normal under the various circumstances in which it has been tested. The question remains how it is possible in the presence of normal renin activity to have overproduction of aldosterone?

Several possibilities are offered to explain such a phenomenon, one being a decreased rate of destruction of angiotensin II by blood and tissue angiotensinases. The dynamics have not been worked out. But when the explanation is worked out for this interesting phenomenon, we shall have added another important facet to our knowledge of the RAAS and hopefully to better therapy for idiopathic cyclic edema.

Another form of secondary aldosteronism is found in malignant hypertension and hypertension of renovascular origin. How increased production of aldosterone occurs in these conditions was speculative until Genest[2] and Laragh[3] demonstrated that intravenous administration of angiotensin II to normal humans provoked a sharp increase in the secretion of aldosterone. It was then clear that in malignant hypertension and in renovascular hypertension, the aldosteronism was secondary to something associated with abnormal renal function. The fact that aldosteronism curable by nephrectomy could occur with renal artery stenosis, suggested that angiotensin II was the common stimulus and in fact renin values and angiotensin levels are reported to be abnormally high in many such cases.

Accordingly a new form of secondary aldosteronism had now emerged. It was a non-edematous form of secondary aldosteronism induced by excessive release of renin from kidneys in which a profound change in local hemodynamics had occurred. The aldosteronism of these conditions manifests itself by the presence of hypokalemia with excessive loss of K in the urine, but as Conn points out, extracellular fluid alkalosis was much less common than in primary aldosteronism due to a functioning aldosterone producing tumor of the adrenal cortex. The presence of papilledema, in malignant hypertension, also helps to distinguish the aldosteronism in these conditions from the hypertension that associated with aldosterone secreting tumors. However, some patients with renovascular hypertension before their hypertension had progressed to the malignant phase, were difficult to differentiate from cases of hypertension due to aldosterone producing tumors. Obviously determining the blood levels of renin and angiotensin should be the deciding factor. If they are high, the aldosteronism encountered in this condition must be secondary.

L.H.N.

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Bacterial Interference

Years ago Metchnikoff[1] suggested replacement of the putrefactive flora of the intestinal tract by feeding the lactic acid fermenting bacillus. He believed that this will prevent putrefaction and prolong life. Actual bacterial interference has been recognized for some time. The clinician is aware that long-term antibiotic therapy suppresses some gastrointestinal organisms and permits overgrowth of others. Virologists recognize interference and have attributed it to a substance elaborated by viruses termed Interferon. Microbiologists use in vitro selective media which inhibit some organisms and allow others to flourish. In vivo it has been shown that animals carrying escherichia coli do not readily become super-infected with other strains of this bacterial species.[2]

This extra-corporeal type of resistence is dependent on the fact that living bacterial agents in tissue interfere with colonization by other strains of the same species. The first organism of a species to become established at a site may in some manner merely by numbers be at an advantage in competing for available nutrients,[3] or the initial organism may prevent colonization with other organisms of the same species by the elaboration of some as yet unidentified substance. Such antibiotic substances designated colicins are produced by certain strains of intestinal bacteria and inhibit growth of other related species. The explanation in this field of human bacterial ecology is only conjectural[4] at this time but the phenomenon is important, because reawareness of bacterial interference challenges traditional concepts about the various methods used in the nursery to avoid staphylococcal infections in the newborn.

Interest in bacterial interference between strains of staphylococci was renewed when Shinefield, et al.[5] isolated from patients a coagulase positive staphylococcus which was associated with mild infrequent disease. This strain of S aureus was designated 502A. Once established in an individual this organism prevents later acquisition of other pathogenic strains of staphylococci. When an outbreak of pathologic staphylococci was recognized in a nursery service and when orthodox control measures failed, then deliberate colonization with 502A strain was employed in an effort to terminate the outbreak. Light, et al.[6] paper describes an outbreak and its ultimate control by exploiting the phenomenon of bacterial interference.

They report on 470 full-term infants and 114 premature ones. Colonization with S aureus 502A which is a non-penicillinase producing organism was accomplished by a swab dipped in broth culture and swept around the base of the umbilicus as well as each nares. They noted that if colonization was discontinued then the 80/81 type pathogenic organism reappeared and was displaced with re-institution of colonization by strain 502A. The colonization was simple and was performed by nurses trained in the technique.

Light, et al. found it very safe to administer the 502A strain to both full term and premature infants. No major pyogenic lesions attributable to the 502A strain were noted, and this strain lacked pathogenicity in both premature as well as in full term infants. When infants spontaneously acquired this organism, they did not later acquire another organism. If the infant is not inoculated with strain 502A there is a much higher incidence of lesions from spontaneously acquired bacteriophage type 80/81 staphylococcus aureus.

It turns out that the infant is an ideal candidate for artificial colonization since he may be considered bacteriologically sterile at birth. This is in contrast to the adult subject where pretreatment with antimicrobial agents may be necessary before obtaining successful inoculation.[6]

Until the present time, traditonally, infection of the newborn has been prevented by barriers erected between the infant and his environment. Linens are autoclaved, bassinets washed, formuli sterilized, hands washed thoroughly, gowns are worn and visitors kept away. When organisms with a propensity to produce disease have been acquired by several infants in epidemic fashion, then antimicrobial drugs will sometimes be administered as prophylaxis. The hazards of this procedure are well known even though they temporarily postpone acquisition of a portion of the infants normal bacterial flora.

From the standpoint of the infant and his potential disease, the results of the "barrier" techniques are governed by chance and the ground is not prepared in his favor. With implants of strain 502A the environment is tipped in the infant's favor by making him resistant to the pathogenic strain 80/81. There is a relative lack of pathogenicity by using this method of bacterial interference and there is no doubt of its effectiveness in preventing colonization with other strains of the same organism.

Of course colonization by strain 502A staphylococcus implies acceptance of the inevitability of acquisition of staphylococcal flora by an infant and the futility of its indefinite postponement. It implies the acceptance of an insignificant hazard of a relatively avirulent strain of organism to prevent colonization by an organism of an unknown risk. In the face of an outbreak of infection with a pathologic staphylococcus, the minimal risk associated with willful colonization with a relatively non-pathologic organism appears justified.

The real question is whether routine purposeful colonization of all newborn infants in non-epidemic periods is now justified. This would be advisable once we understand the mechanism of this staphylococcus interference. Then it might be possible to favor colonization of all infants at birth with a staphylococcus unlikely to cause disease.

It is conceivable that at some future time traditional nursery asepsis and isolation will give way to controlled administration of safe and effective bacterial flora.

L.H.N.

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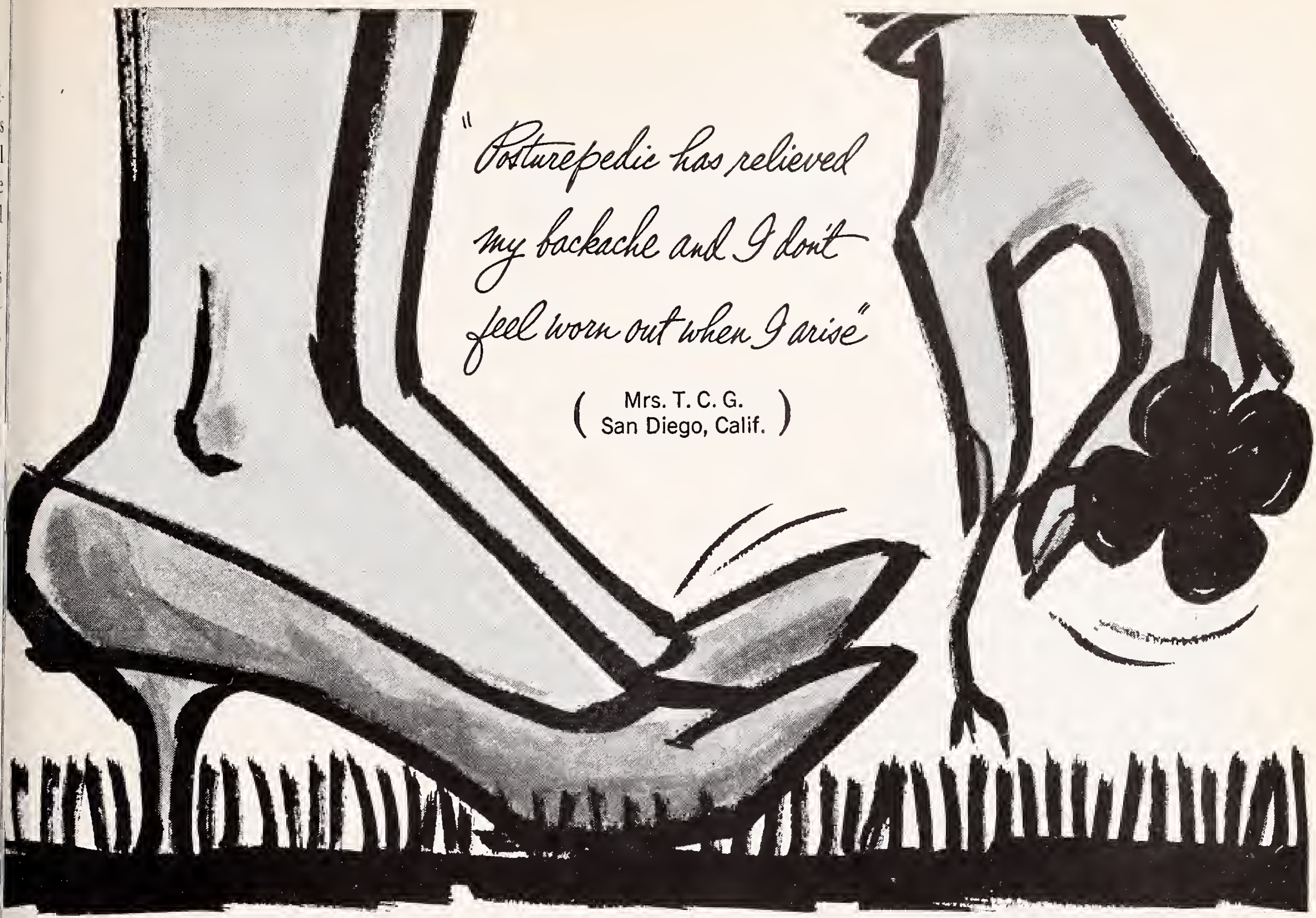
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Sixty-five And Over: 1. How Does He View Himself?

In July 1966 almost 16 million people over age 65 will have their hospitalization and convalescent care paid for by the government except for the first forty dollars. Their medical bills during hospitalization will be paid for if the patient subscribes to the $3.00 a month Part B of Medicare which provides for paying doctors as a supplement to the basic hospitalization that comes with Part A. This new development in American medicine makes it mandatory upon physicians and social workers to sharpen our appreciation of the factors involved in the aging process to gain a clear knowledge of how the patient views life from his point of view, and in what way diseases that affect him are differently manifested than in the younger age groups.

When does a person become old? There are known changes due to aging in many tissues and organs, but the biologic time clock for the whole person is quite variable. Some careers like sports end at an age when others like medicine and the law are just beginning. Although the middle-age lable is for a long time resented, it is later clung to. The 65th birthday has a great impact. The next 10 years are the "I'm not really old"—years. Those after 75 are the "I'm old, but"—years. Gradually what were milestones becomes millstones, for what is old is considered out of date, perhaps inefficient, unattractive and unmarketable. And yet, there are many strengths and assets that are to be found only in old age. They are largely the outgrowth of earlier living. Individuals are so complex that a release of stress in one area or a resumption of good habits in another, or a better ordering of steps towards a goal can lead to performance in the last years far beyond what could be foreseen. Recognition of these facts is of the utmost importance to the physician and social workers who will be dealing with these patients.

When an adult suffers from the consciousness of loss of life expectancy or loss of some function he can be said to be aging. When young his future seemed to be endless. Now the biblical phrase three score and ten begins to haunt him or he may be agitated to note the near approach of the age at which his relatives died. According to life expectancy tables he may have many more years to plan for, certainly long enough to warrant continuing involvement in the here and now. Too often however he may have a constricted view of the future which becomes an excuse to avoid involvement. Then he kills what time he has and lives out a sentence.

If there is fear of death it is usually well concealed. Generally he summons enough courage every day not to be disturbed by thoughts of his own dissolution. Here his life-long attitude will tell how he will handle this problem, whether he is of a fearful nature or whether he has always faced life by a challenge. Everyone at every age has many opportunities to develop challenge instead of fear. Henry Thoreau wrote in Walden "the mass of men lead lives of quiet desperation." This of course is not conducive to living a life of challenge.

Physicians see the aging adult almost exclusively in the role of patient and all patients are frightened people.[1] The older patient has his own particular fears. One of them is of the physician if they are not acquainted. What will he find? What will he do? Can he understand the patient as a still worthwhile person? There is fear of the disease he has. Will it end his life or make him an invalid and will he be able to manage his life without drastic changes in his activities? With many there is fear of expense. Can he afford all the tests and treatments that may be advised or will he have to dip into savings or accept help from relatives or charity and if the latter, how much independence and self-respect will he lose? There is fear of having to give up his home or of having no home to return to from the hospital or being ordered to go to a nursing home or institution.

But even if the man is not a patient he discovers he is living in a world of strangers. He has lost his familiar guides, parents, relatives, teachers. He is now the senior member of the clan, with it goes a sense of loneliness and some alarm. On retirement he loses those who guided him at least during working hours. If his spouse goes, it is calamitous. He loses the one who gave him daily guidance and with her goes the security of shared memories and comfort, of verbal and non-verbal communication. His children and younger friends become impatient with him for not adjusting promptly to his losses. They appear to believe as he himself once did that he can have no problems and no need for guidance. But a habit of proceeding without guidance invites less active involvement in living, a form of disengagement which unfortunately has been viewed as normal and desired by both old people and society.

The aging adult also may feel a loss of significance when his usual occupation ends, unless they have alternatives right at hand or have prepared for a "second career." Even if they have ample resources for their needs it still may require months of difficult struggle to acquire poise. He "was a teacher" or used to be with .... Co. His title, senior citizen, assumes a connotation of demotion from the first team. He is outside the mainstream of life as he has known it. He can easily go on to lose a sense of belonging.

Then there is the question of the actual way his body functions. Sooner or later the aging adult becomes aware of a loss of sensory income from eyes and ears, or control over the central nervous system or of his physical capacity. Loss of sight can cause a shattering dependency. He can't get about so readily or drive an auto. Deafness interferes with communication with the aging person's human group. He is irritated by "weak" voices and indistinct enunciation. They are annoyed at his wrong guesses of what was said.

Then there is the question of mental function. Few people reach 65 without discovering that their memory is not as good as it used to be. Sometimes when one cannot remember causes a form of stage-fright. But part of non-remembering is not really due to loss of interneurons. It may be due to a habit of excluding from their minds the memories that are unpleasant or painful. Part may be due to failure to pay attention to events as he used to do before retirement. What is not observed clearly cannot be stored in memory. Then there is a certain monotony, a dull sameness as compared to earlier days when everything was new, exciting and easily recalled. If he is taught to pay full attention to the here and now and to check up frequently on what was said, using pencil and paper freely, part of the defeat of forgetfulness can surely be overcome.

Observations at the Age Center of New England[2] suggested that intellectual performance in the later years depends a great deal on how much was invested in its development. Well-trained people live a more active mental life which is extended to old age. The pursuit of pleasure rather than happiness, the neglect of reading and exploring in favor of the easier passivity of depending upon predigested magazines and television, is not conducive to intellectual activity. Then there is relinquishment of interchange of ideas because of loss of companions. All these can lead to an uncomfortable degree of muddle-headedness when the last career of retirement begins.

This is a time too when established habits of decision-making is to be reckoned with. Those who are accustomed to facing the facts that life deals them and to coping with them fare differently than those who have found decisions difficult or avoidable. What it all means is that after 65, life can be full of meaning if one prepares for it during the active years. Too often however the retired person who knows the program he wants and puts into effect is a rare bird, unfortunately.

L.H.N.

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Contradictions In Science And The Scientist: 1.

The term cognitive dissonance has been used by Festinger[1] to indicate the existence of incompatible beliefs or attitudes held simultaneously by a human being and in this respect scientists turn out to be human. You like to smoke and you do, and yet recent events convince you that smoking is a positive hazard to lungs and body. You accept the Christian ethic that the meek shall inherit the earth, but at the same time the ethic of chivalry that sullied honor must be avenged, that we must kill because we are committed to certain courses of action. How can you manage then to give rationalism its due? Festinger says that we do it in several ways. We change our behavior (stop smoking), we change our cognition (pooh-pooh the scare about cancer), or we suppress and ignore the dissonance altogether (forget that Jesus condemned war). Or we do something in between like rationalizing and distorting the cognition. How does the scientist function in the presence of cognitive dissonance? Does he inexorably follow rational experience? Does he ever condone dishonesty? Does he oust dissonance as soon as he becomes aware of it?

In order to derive answers to these questions we must first realize that we are products of the prevailing culture. There is a new history—actually not so new since Count Tolstoy already spoke of it 96 years ago—one that looks below men's ready consciousness to deeper forces that control their acts and opinions. One of these forces is the general current of beliefs, the stream of change in what the cuture carries as the truth at any particular time or at least the generally accepted opinion. Goethe called this influence the Zeitgeist and this concept has now come into general use and generally believed to be operating unconsciously.

Embedded in the prevailing culture in science is the paradigm—T. S. Kuehn's[2] word for a fundamental hypothesis. In biology special creation formerly and later natural selection. Scientific revolutions change the prevailing culture. The big changes, Ptolemy to Copernicus, the little one, Galton to rediscovered Mendel. Clearly the Zeitgeist is a universal source of information and attitude because our ideas have to come from somewhere, they do not arise fullblown as did Juno out of the head of Zeus.

The prevailing culture has its several compartments. One is the national habit of thinking. In this country psychologists who utilize subjective introspection farewell. In the Soviet Union it fares poorly because of the prevailing culture based on dialectical materialism. For a long time molecular biology spurted forward in this country not being shackled by dogma which pervaded biological laboratories in the Soviet Union. Certainly the potential climate of opinion is radically different in Alabama than it is in Maine, nor was the difference the same in 1960 as it was in 1860.

Another segment in the prevailing culture of science are the intellectual forces that differ between schools of thought, a century ago it was between vitalists and mechanists. Even thirty-five years ago it was difficult for a great professor of physiology to accept a finding of the uniqueness of metabolism in the brain because he had been taught by Graham Lusk that all organs have similar metabolic machines. One can see that general prejudices shade over even into individual prejudices.

Boring[3] has presented seven instances of occasions in which the scientist proceeds in the fact of cognitive dissonance, sometimes aware of what he is doing, sometimes not. Sometimes he suppresses into unawareness a rejected alternative. Sometimes on the other hand consciously achieving resolution of his dilemma by changing his opinion, the most difficult of all solutions to cognitive dissonance.

It was mentioned above that a paradigm is a fundamental hypothesis or model in respect of which thinking takes place. It is a way of perceiving nature. If a change occurs in an important paradigm it constitutes a scientific revolution; special creation vs. natural selection; Newton's addition of attraction as a characteristic of all matter. At present a moot revolution is still in progress, the dualism of mind and matter of Decartes vs. the physicalism of both mind and matter as demanded by modern positivism. Although the historical change is slow both in the body of scientific belief and even in the individual thought, the cognitive change between alternatives of a paradigmatic dissonance is sudden. Sooner or later the new belief becomes a part of the prevailing culture and is again carried along unconsciously for the most part. It becomes fundamental to the thinking of most wise men until something new happens. Natural selection replaces special creation. Another example is the formulation by Einstein of the relativity theory which made both heliocentric theory and Newton's mechanics less sure.

The eponym is a second method of creating cognitive dissonance. It is a method of applying the name of a great man to his discovery. We think in such terms as Aristolelian thinking, Copernicus theory, Newtonian mechanics, Cartesian dualism, Mendelian inheritance, the Darwinian epoch, Freudian psychodynamics. It is true each of these great men gave a sudden spurt to science by offering a revolutionary insight or initial discovery. Eponymity performs the service of making history easier to handle and is said to promote economy of thinking. But it may stand in the way of new paradigms by suppressing the unpleasant developing of a contradictory idea.

Perhaps the best known instance of cognitive dissonance that the scientist encounters is the antithesis between the paradigm of freedom and that of determinism. In science the paradigm of determinism works well. It is a good policy, for the scientist otherwise could not pursue cause and effect. However, it is dissonant with the practical problem of living. The scientist is also a human being in his relations with people. His duty and responsibility is founded upon the paradigm of freedom. Language is shot through with the implication that men are free to choose. It is a policy claimed to be justified by universal use. How then is the role of consistency and inconsistency resolved in such a case? By realizing the doctrine of paradigms says Boring.[3] The scientist chooses the paradigm of determinism when he designs his experiment, when he theorizes, when he is thinking scientifically. In practical life he needs to believe in his freedom unless he is a psychologist, then he examines the behavior of his subject in respect to the conditions that determine it. It may be said that determinism is the broader and more positive paradigm for its opposite, freedom, is negative consisting in a preference for "ignorance." It means the causes either cannot be or actually haven't been discovered. To believe with William James that human dignity must be preserved by arresting a fraction of human behavior from the shackles of causality is to gain contentment without even a struggle to penetrate ignorance.

L.H.N.

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"...it is extremely difficult and sometimes impossible to differentiate between 'pure depression' and anxiety and it is questionable whether depression without a certain degree of anxiety really exists."

Lehmann, H. E., Canad. Psychiat. Assn. J. *4(S)*: 1-12, 1959

An antidepressant designed for the clinical realities of office practice

As many physicians have reported, the large majority of neurotic depressed patients suffer from both depression and anxiety. It may be difficult to decide whether these patients are primarily depressed or primarily anxious. And yet drug treatment of only the symptom which seems more prominent may exacerbate the untreated element of the depression complex.

Consequently, it would seem that therapy specifically aimed at both the depression and associated anxiety and tension should increase success in treatment.

This is one of the important reasons why 'Deprol' has proved particularly helpful. For 'Deprol' acts rapidly both to lift the mood and to relieve the associated anxiety, tension and insomnia.

And side effects, at recommended dosage, have been infrequent and generally readily controlled.

Indications: 'Deprol' is useful in the management of depression, both acute (reactive) and chronic. It is particularly useful in the less severe depressions and where the depression is accompanied by anxiety, insomnia, agitation, or rumination. It is also useful for management of depression and associated anxiety accompanying or related to organic illnesses.

Contraindications: Benactyzine hydrochloride is contraindicated in glaucoma. Previous allergic or idiosyncratic reactions to meprobamate contraindicate subsequent use.

Precautions: *Meprobamate*—Careful supervision of dose and amounts prescribed is advised. Consider possibility of dependence, particularly in patients with history of drug or alcohol addiction; withdraw gradually after use for weeks or months at excessive dosage. Abrupt withdrawal may precipitate recurrence of pre-existing symptoms, or withdrawal reactions including, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, the dose should be reduced and operation of motor vehicles or machinery or other activity requiring alertness should be avoided if these symptoms are present. Effects of excessive alcohol may possibly be increased by meprobamate. Grand mal seizures may be precipitated in persons suffering from both grand and petit mal. Prescribe cautiously and in small quantities to patients with suicidal tendencies.

Side effects: Side effects associated with recommended doses of 'Deprol' have been infrequent and usually easily controlled. These have included drowsiness and occasional dizziness, headache, infrequent skin rash, dryness of mouth, gastrointestinal symptoms, paresthesias, rare instances of syncope, and one case each of severe nervousness, loss of power of concentration, and withdrawal reaction (status epilepticus) after sudden discontinuation of excessive dosage.

Benactyzine hydrochloride—Benactyzine hydrochloride, particularly in high dosage, may produce dizziness, thought-blocking, a sense of depersonalization, aggravation of anxiety or disturbance of sleep patterns, and a subjective feeling of muscle relaxation, as well as anticholinergic effects such as blurred vision, dryness of mouth, or failure of visual accommodation. Other reported side effects have included gastric distress, allergic response, ataxia, and euphoria.

Meprobamate—Drowsiness may occur and, rarely, ataxia, usually controlled by decreasing the dose. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses. Mild reactions are characterized by an urticarial or erythematous, maculopapular rash. Acute nonthrombocytopenic purpura with peripheral edema and fever, transient leukopenia, and a single case of fatal bullous dermatitis after administration of meprobamate and prednisolone have been reported. More severe and very rare cases of hypersensitivity may produce fever, chills, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic in such cases, and the drug should not be reinstituted. Isolated cases of agranulocytosis, thrombocytopenic purpura, and a single fatal instance of aplastic anemia have been reported, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity has been reported, usually after excessive meprobamate dosage. Suicidal attempts may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

Dosage: Usual starting dose, one tablet three or four times daily. May be increased gradually to six tablets daily and gradually reduced to maintenance levels upon establishment of relief. Doses above six tablets daily are not recommended even though higher doses have been used by some clinicians to control depression and in chronic psychotic patients.

Supplied: Light-pink, scored tablets, each containing meprobamate 400 mg. and benactyzine hydrochloride 1 mg.

Before prescribing, consult package circular. CD-5749

Deprol®
meprobamate 400 mg. +
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Hyperthermia From Dicyclomine Hydrochloride

Jacob Greenblatt, M.D.

■ Dicyclomine (Bentyl) is an antispasmodic with minimal side-effects. Hyperthermia, in particular, has not been reported since its introduction in 1950.[1,2] It is an atropine-like derivative, known chemically as diethylaminocarbethoxycyclohexyl HCl.[3] Compared to atropine, it is one-eighth as potent against spasm, has 1/400th of the mydriatic action, and is 1/300th as potent in reducing salivation. As regards toxicity, it is relatively so innocuous that a two and one-half year old child is reported[4] to have taken 90 mg. of it without any toxic reaction except for slight mydriasis.

These characteristics led to a recommendation for its use in infantile colic by Pakula[5] in 1952. He studied its value in alleviating colic in seventy-two infants. The doses employed ranged from 2.5 to 10 mg. He found it helpful and particularly without side-effects, except for two cases of maculopapular rash. Ever since the publication of these results, the present author has prescribed it without encountering any toxicity until the following case:

Case Report

An eleven day old white infant suffering from colic was given two doses of 3.7 mg. of dicyclomine and 5.5 mg. of phenobarbital (in the form of a diluted solution of Bentyl with Phenobarbital (R)) over a period of one hour. Within a few hours her temperature rose to 106° F. (rectal). She was admitted to Stamford Hospital (on Sept. 11, 1964). Past history revealed no illnesses; her birth weight was seven pounds, twelve ounces. Family history revealed no allergies or drug sensitivities.

Examination revealed a well-developed, well-nourished infant with generalized flushing of the skin. She cried lustily, and there were no abnormalities. Consultation was held with Dr. R. D. M. Cunningham, who agreed that drug reaction was the most likely diagnosis. An injection of 50 mg. of oxytetracycline was given i.m., but within one-half hour of admission, her temperature dropped to normal. It remained there for the subsequent days of her hospitalization. Laboratory studies revealed a hemoglobin of 17.7 gms., erythrocyte count of 4,780,000, hematocrit of 54%, leucocyte count of 19,700 with 54% neutrophiles (of which 9 were bands) 33% lymphocytes, 12% monocytes, and 1% eosinophiles. The urine had a specific gravity of 1.010, and was negative for albumin, sugar, and cells.

She was discharged after two days during which her temperature remained normal. Her course for the subsequent four months has been uneventful.

Comment

The sudden onset of hyperthermia after the administration of dicyclomine, followed by an equally rapid drop to normal temperature, without any further rise, can best be explained as a reaction to medication. This is known to occur from atropine and similar compounds.[6] It is explained as due to a suppression of perspiration. Leucocytosis occurs in atropine reactions,[6] just as it did in this case to dicyclomine. There was no evidence of infection or any other abnormality. The one injection of oxytetracycline could not have eliminated any infection. The dose of dicyclomine was within the range used by the author and others,[5] although on the high side. Since the dose was not minimal, this reaction cannot be classified as one of hypersensitivity.[7,8] To confirm this, a provocative test would be required, but this was not done for obvious reasons.

Summary

An eleven day old infant developed a temperature of 106°F. (rectal) following the administration of dicyclomine.

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Renascent Venereal Disease Problem and Suggestions For Control

Hyman A. Levin, M.D.

■ Under the column "Medical News—from Washington," the *Medical Tribune,* a newspaper devoted to news and views on the medical scene, in its issue of April 5, 1965—headlined 'Venereal Disease Held Epidemic in Large Cities.'

The report of the Chief of the Venereal Disease Branch of the U. S. Public Health Service Communicable Disease Center in Atlanta, Georgia, Dr. William J. Brown states, "An 'epidemic' of venereal disease is currently sweeping through the nation's largest cities, even though the incidence appears to be increasing at a slower rate." He estimates 10,000 new cases of syphilis are occurring every month in the United States. While the rate of increase is becoming smaller, the number of cases of primary and secondary syphilis is ahead of previous years. There was a total of 21,067 cases reported in 1962 and 22,251 in 1963. For eight months ending in February this year for the same relative period last year, it would be 15,543 cases against 15,177. These were cases reported to the Communicable Disease Center. Since cases are not adequately reported, there is no equating the figures with the true conditions, but it furnishes a lead. The incidence of gonorrhea has showed an increase from 148,412 cases in the second half of 1963 to 158,281 in the same period of 1964. According to his overall estimate there should be more than 200,000 cases of syphilis and of gonorrhea in excess of one million.

By geography more than 50 per cent of syphilis cases should be found in the 30 largest cities of the United States. This is because of a steadily increasing urbanization with millions of susceptible persons. Among other factors to be mentioned are mobility through use of automobiles and planes by infected individuals, immigrant labor groups and the use of the 'wonder drugs' which give a false sense of cure and which I will come back to below.

The seriousness of this problem is accentuated by the huge increase of these diseases in teen-agers. Persons under 20 years of age show an increase in syphilis of more than 200 per cent between 1956 and 1963 with the final figures for 1964 yet to be computed.

Connecticut State Department Of Health

To come closer to home one will note from a report sent to me by Dr. Henry Talbot of the Connecticut State Department of Health, Chief of Venereal Disease Section,[1] that cases of early syphilis in the 1950's were at a low ebb and since that time have started to increase in numbers considerably. Latent and congenital syphilis have decreased correspondingly. However with the new trend one may expect recrudescence of these cases. Gonorrhea is also on the increase.

In the foreword to "Syphilis—Modern Diagnosis and Management," distributed by the Connecticut State Department of Health one finds this statement—"An eight year decline of early syphilis ended in 1955. By 1958 early infectious cases were being reported in increasing numbers from all areas and among all social groups." Something has happened to bring about a new increase in venereal diseases after the initial successful onslaught of penicillin and the sulfa drugs. Is it because penicillin has not been the magical eradicator? It is still a miracle drug to those whose experience and knowledge of these diseases pre-dates their introduction with the long drawn-out return to normalcy and its painful complications. There is ex-

Table I

Connecticut State Department of Health
Cases of Syphilis Reported by Stage of Disease

CALENDAR YEAR	PRIMARY	SECONDARY	EARLY LATENT & LATE LATENT	CONGENITAL	TOTALS
1953	21	19	733	38	811
1954	30	17	784	40	871
1955	22	13	721	44	800
1956	42	26	890	55	1,013
1957	25	29	712	32	800
1958	44	24	619	24	621
1959	39	25	498	16	578
1960	58	34	432	27	555
1961	81	48	524	28	681
1962	87	71	599	14	771
1963	60	68	533	15	676
1964	88	77	422	9	596

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Table II

Gonorrhea Reported in Connecticut

1953	692
1954	976
1955	874
1956	1,522
1957	1,509
1958	1,424
1959	1,446
1960	1,563
1961	1,812
1962	1,805
1963	2,000
1964	2,281

pectation of a rapid 'cure' which apparently has distorted thinking.

I have mentioned in references above some reasons for the refusal of these diseases to roll over and play dead. We must get back to the basics which held these diseases in check. During World War I, Dr. Hugh Young, as Major Hugh H. Young, M.R.C.,[2] submitted a manual with the collaboration of other prominent urologists for dealing with the Venereal Disease in the Armed Forces. By prophylaxis and education they produced a proud record of achievement in decreasing the ravages of these diseases in members of the A.E.F. Among 100,000 instances of prophylaxis given in Base Area No. 2, Bordeaux the percentage of failures was 1.7 per cent. Education and prophylaxis must again be stressed in civilian life, especially to teen-agers. In Houston, Texas a text-book, "Introduction to Syphilis and Gonorrhea," has been issued to some 8,000 eighth graders. Disregarding the potential for infection by any and all contacts should be taught to be foolhardy. Another basic which should be given serious consideration is the possibility that a single contact could be responsible for infection with both gonorrhea and syphilis. Since the former becomes apparent much earlier than the latter it is my considered opinion that every fresh case of gonorrheal urethritis should get full treatment, least a possible infection with syphilis becomes a latent one because of an insufficient anti-luetic attack by the antibiotic. While I do not have the figures at my command on the percentage possibilities of a double infection, for the patient involved it is 100 per cent.

Table III

	PRIMARY & SECONDARY SYPHILIS 15-19 AGE GROUP	GONORRHEA 15-19 AGE GROUP
1953	1	59
1954	3	81
1955	3	63
1956	4	128
1957	5	167
1958	4	158
1959	8	154
1960	10	175
1961	9	227
1962	22	260
1963	11	271
1964	15	284

Treatment of a frank gonorrhea or early syphilis (primary sore) is not the primary purpose of this communication. However one may not know that the urethritis may be the first of a double infection acquired from one contact. The treatment of the urethritis sufficient to eradicate it, may not be enough to warrant a thorough prophylaxis against the exposure to spirochetes.

Assume a patient shows up in the consulting room with a freshly infected urethra. According to 'Notes on Modern Management of Venereal Disease,' issued by the U. S. Department of Health, Education and Welfare, Public Health Division, Penicillin (if using Aqueous G) as suggested, he would be given a total of 1,800,000 units for uncomplicated gonorrhea. The same penicillin, if used for early syphilis is recommended by this authority to total 4,800,000 units. Complicated cases will naturally require more intensive therapy. If other preparations of penicillin are used there will be the same relative increase in dosage for these two venereal diseases. I deem it advisable to continue the dosage of penicillin for urethritis to the full treatment recommended for syphilis. Time is of the essence and in this situation it may be used advantageously to guard against a possible luetic infection. While some may resist this thinking as excessive therapy, it is the end result that counts. It will be worthwhile if it closes an occasional barn door.

Summary

In view of the alarming statistics of venereal infection in "teen-agers," we should intensify our educational campaign in high schools and colleges. I have experienced total ignorance of these diseases on the college level.

The necessity for prophylaxis is as great today as it ever was.

I propose that every patient newly infected with the gonococcus be given the full treatment. This prophylaxis will reduce in a measure the incidence of lues.

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Lip Reconstruction

Marvin S. Arons, M.D., D.M.D.

Introduction

■ When any part of the face is missing, careful scrutiny is required to estimate the amount of tissue which has actually been lost. Occasionally, this is difficult due to the effects on adjacent tissue from the contraction of the scar. In any operation, misplaced normal parts must be replaced in their normal pre-traumatic position. Pre-operatively, an accurate estimate must also be made of the amount of tissue missing including: (1) covering skin, (2) lining tissue, and (3) bony support.

A general rule to follow in the repair of facial defects is to shift adjacent tissue. When this procedure is not possible, tissue is selected which is located as closely as possible to the defect in order to match as nearly as possible the texture, color, and consistency of the skin. When there is sufficient neighboring skin, a transpositional flap or a rotation flap may be used to achieve good color match and contour. The local secondary scar deformities are really unimportant compared to correcting the defect with proper shape, size, color, texture, and consistency. Thus, the principle of barter is employed to avoid esthetic disparity and to simplify reconstruction.

It has been stated that the best friend of the plastic surgeon is time. With the passage of time, scars become softer, smoother, more supple and pliable, and blend better with the adjacent tissues, permitting the area of repair to adapt itself to the adjoining and underlying tissue. Time must elapse in multiple stage operations to permit re-vascularization, maturation, and softening of scars before proceeding to a later stage in reconstruction.

Finally, multiple staged procedures should be avoided in old people especially if the procedure requires general anesthesia. Considerations of appearance in the elderly are really less significant than early satisfactory functional results. Personal comfort at home is probably more important than considering color and texture in the hospital. Brown and Fryer[1] have reviewed some of the clinical problems attendant on the surgical repair of major defects of the face.

Reconstruction Of The Lower Lip

In his recent book, Barksy[2] has reviewed some of the methods of reconstructing the lower lip. The simplest method of immediate restoration of the lower lip is, of course, the regular "V" operation, but this is only suitable for excisions of about one inch in width. An improved technique for the V-shaped excision is to arrange the incision so that the width of the vermilion-borders on each side of the lesion will be equal when approximated. Since many have noted that vertical scars on the lower lip have a tendency to hypertrophy, the scar often requires a secondary z-plasty. This has been purported to decrease the possibility of a notched deformity of the lower lip; however, the secondary z-plasty on the vertical scar often makes a more pronounced scar which is even more prone to hypertrophy in the mental area.[3] The V-shaped procedure also may be employed for excision of tissue or for reconstructing soft tissue loss from trauma. Another V-modification which incorporates a step closure—as in an eyelid—also has been advocated.[4] Still another modification of the V-excision is one which incorporates the excision of lesions of the lower lip in the shape of a shield combined with preservation of the oral mucosa so that the excision is not through-and-through allowing a vermilionectomy to be done simultaneously.[5] In local excision of lower lip lesions, a z-plasty on the oral mucousal surface helps prevent post-operative notched deformities.[6]

For repair of losses of the lateral portion of the lip the Estlander operation can be utilized and this requires the use of a lateral upper lip-switch flap down to the lower lip to restore the defect and re-create the oral commisure. There are several modifications of this basic procedure, but the cosmetic appearance is far from perfect and the corner of the mouth often has a tendency to continue to drool. A modification of this flap has been reported by rotating the flap through only 90 degrees instead of 180 degrees with advancement of the separate mucosal flap.[7] Ferris Smith[8] repaired losses of the lower lip by turning hinge flaps from either side of the defect to provide the lining and using flaps from the chin and submental region for the covering. Pierce[9] reviewed more than 50 different methods for reconstructing the lips and personally restored the lower lip by using bilateral nasolabial flaps, one side for the lining, the other side for the

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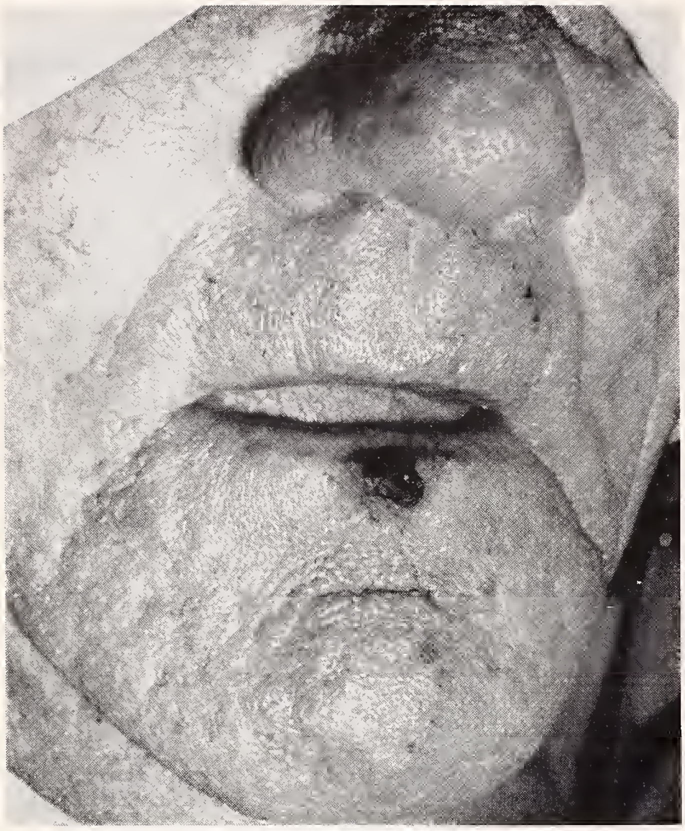


Figure I
Squamous cell carcinoma of the mid lower lip.

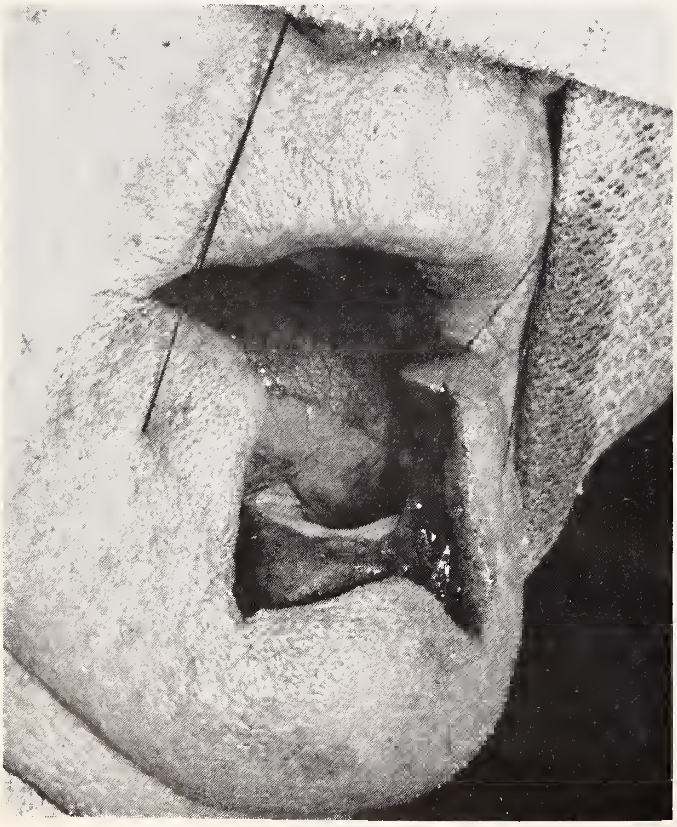


Figure II
Wide local resection of the lower lip. Note the vermilion flap.

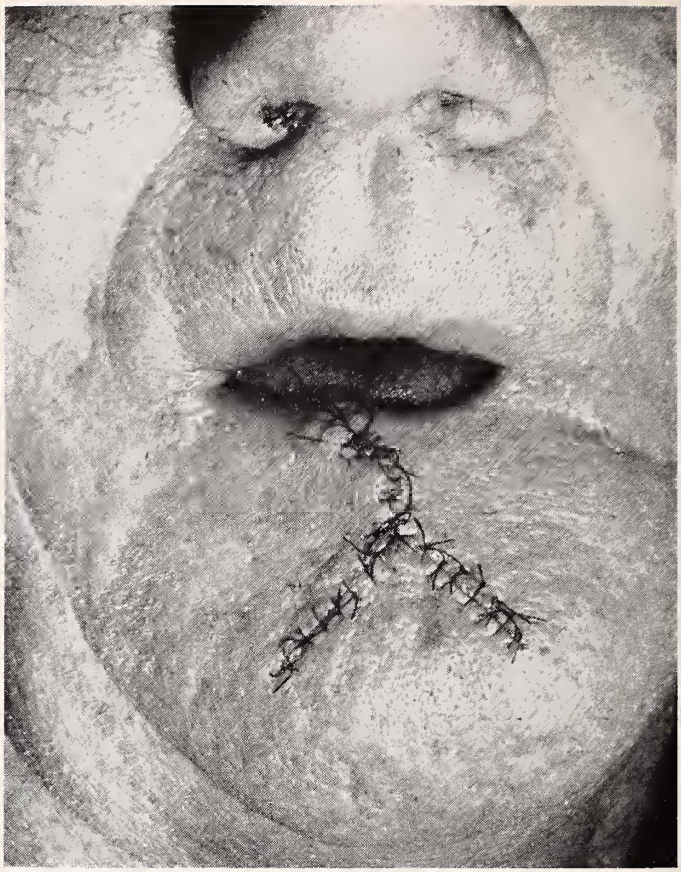


Figure III
The lower lip defect has been closed in three layers: oral mucosa, muscle, and skin.

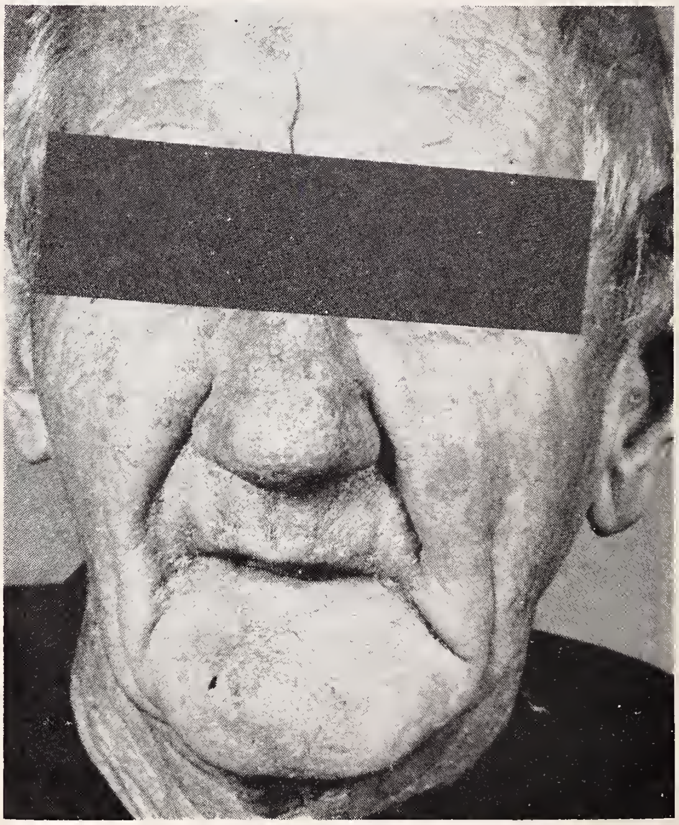


Figure IV
The lower lip two weeks postoperatively after cancer resection.

skin covering. Visor flaps have been used to restore the lower lip as well as tube pedicle flaps.[10] However, these latter four procedures usually are used only when there is a complete or total loss of the lower lip. Also to be included should be the procedure of Owens[11] which reconstructs the lower lip by utilizing separate flaps of skin and mucosa.

In the new textbook of Reconstructive Plastic Surgery,[12] most of the techniques for restoration of the lower lip have been reviewed. Other techniques noted were the modified Stein operation using upper lip—switch flaps from the philtral area, the Gillies fan-flap technique, swinging in adjacent lower lip tissue but leaving multiple suture lines, and the Dieffenbach procedure, utilizing bilateral full-thickness cheek flaps. May[13] has stressed the use of a modified Dieffenbach procedure for closure of large defects of the lower lip and chin. By the number of procedures and their various modifications, it is obvious that not one technique is best and that all have their limitation as regards function and form.

Modified Bernard-Burrow Procedure

The Bernard operation with its modifications, generally, has been successful in reconstructing the lower lip. This procedure utilizes the principle of lateral full-thickness advancement flaps facilitated by excision of Burrow's naso-labial triangles. This technique is employed for sub-total losses of the lip by Martin,[14] Peet and Patterson,[15] and Pickrell.[16] The latter author has modified this so that a rectangular excision of the lesion or defect of the lower lip is obtained down to the level of the mental crease and curved incisions are then made laterally and inferiorly in the mental crease, so that one essentially ends up with an inverted-T incision with the three points lying in the mental crease. Blocker[17] has modified this basic procedure so that the incision is sutured together as an inverted-Y (Figures I, II, III, IV). MacFee[18] has also made modifications and uses a large cheek flap, the incision being in the preauricular area as in the parotidectomy or rhytidoplasty incision. Blocker[17] also has modified the Bernard-Burrow operation so that following excision of the lesion of the lower lip, the resultant scar falls into all normal skin folds of the chin and a long vertical scar is avoided. This type of reconstruction is suitable when the lateral one-third of the lower lip—or about 30-40 per cent of the lower lip—is missing or is excised (Figures V, VI, VII). When the lateral one-half of the lower lip is missing, it is then necessary to excise tissue in the corresponding naso-labial groove. However, no mucosa is excised, only skin and subcutaneous tissue. Also, the continuity of the orbicularis oris muscle is not disturbed since it is only transected about half way while the remaining portion is dissected free and undermined. Following this, a flap of buccal mucosa is undermined and brought forward to cover the new oral commisure area. When only about 70-80 per cent of the lower lip is lost due to surgery or trauma, then bilateral naso-labial triangle excisions are required as well as bilateral buccal mucosal flaps. Another important procedure is a z-shaped incision on the vermilion to prevent a notched deformity in this area (similar to the repair of the vermilion in a cleft lip.)

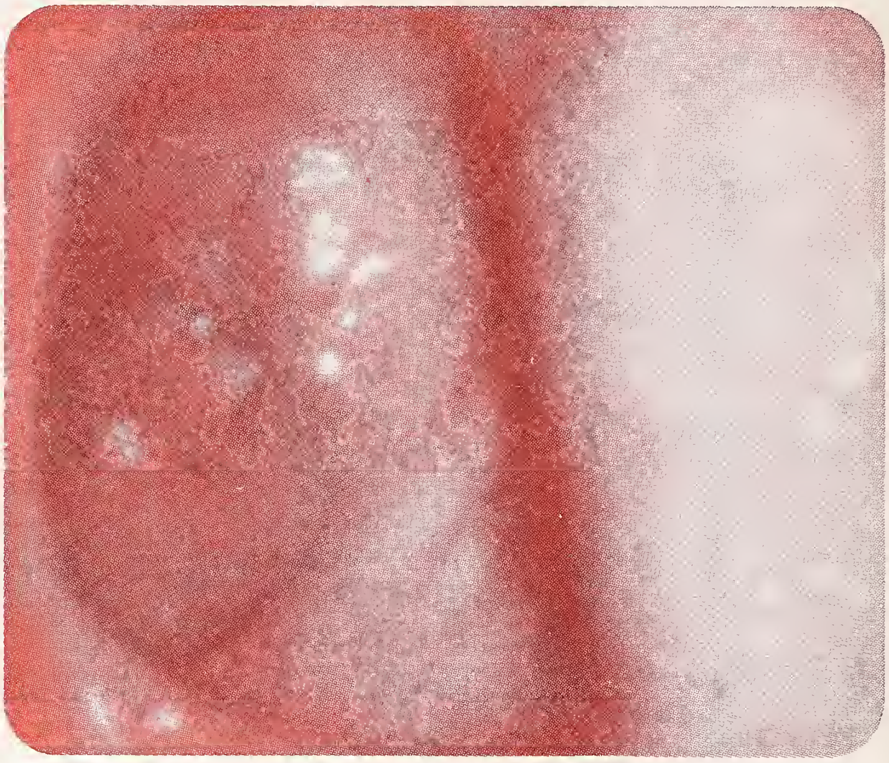
This procedure has given uniformly excellent results as far as function and appearance are concerned and the principles also have been employed for upper lip lesions modifying a technique originally described by Webster[19] (Figures VIII, IX, X, XI). In older patients with enough soft tissue laxity and with a lesion of the lip requiring only about a 30 per cent excision, the Burrow's triangle excision occasionally may be omitted (see Figure V).

In the cases illustrated, 1) the primary lesion has been widely resected, 2) the problem of drooling has been obviated, 3) unsightly appearance has been improved with minimal scarring with the scar falling in the normal lines of the skin folds of the face, 4) no faulty articulation has resulted, and 5) the nerve supply and musculature of the lips have not been violated. Thus, the criteria for successful lip reconstruction has been satisfied.

Squamous Cell Carcinoma Of The Lip

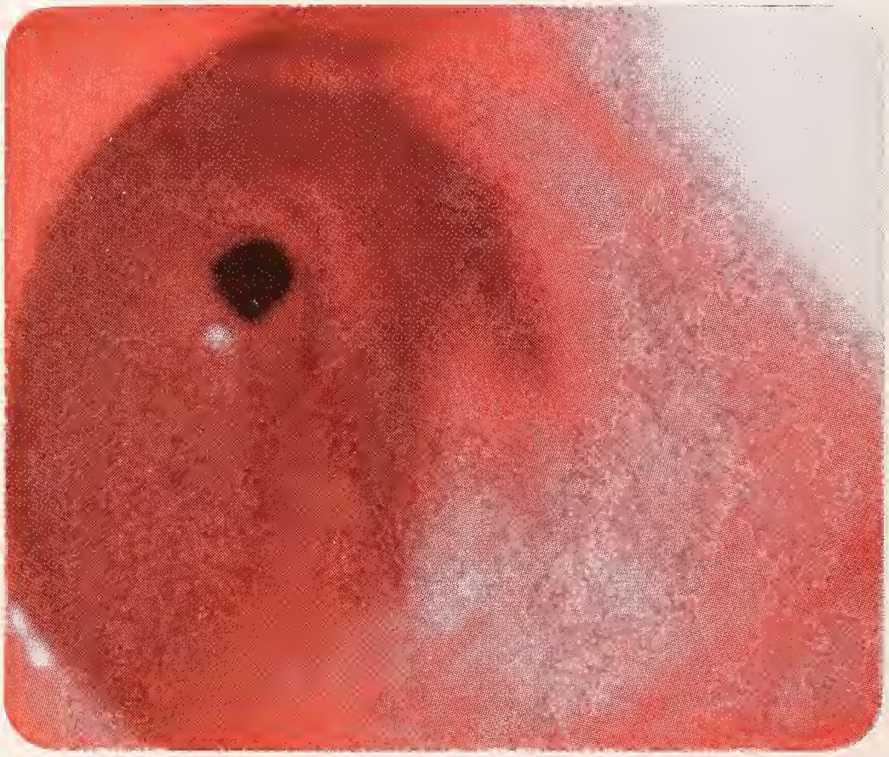
Although this presentation is not intended to be a review of carcinoma of the lip *per se,* a few significant points should be mentioned. Epidermoid carcinoma of the lip is the most common malignancy of the alimentary and respiratory tracts. With the exception of basal and squamous cell lesions of the skin of the face, no head and neck neoplasm is more frequently encountered.[20] Of squamous cell carcinoma occurring on the lips, only about five per cent present on the upper lip.[3] In 1941, Martin[21] reported that of his patients admitted with squamous cell carcinoma of the lower lip without palpable evidence of cervical metastases and in whom the primary lesion was subsequently cured, only eight per cent developed cervical metastases during an observation period of five years. In 1947, McClure[22] concluded that the incidence of metastases of cancer of the lip does not appear to be high enough to consider prophylactic neck dissection as a routine method. Cross[23] also came to a similar conclusion after reviewing over 500 case records of carcinoma of the lip. In 1951, Wookey and Ash[24] analyzed over 1,100 cases of lip cancers after five years and found that only 13 per cent of the patients had lymph node involvement. In 1956, Backus[20] reported that of 226 patients with

Intragastric photography studies[1]



A/ E. B., male, age 48. Normal antral contraction. Pyloric opening is not seen. It is difficult to differentiate a deep prepyloric contraction from a "pyloric fleurette" or true pylorus.

B/ Same subject after 6 mg. of propantheline bromide intravenously; antral contractions ceased. The pyloric orifice remained open and was easily identified. Better visualization of the antrum was also obtained.



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1. Barowsky, H.; Greene, L., and Bennett, R.: Investigators' Clinical Report. Photographs courtesy of Drs. H. Barowsky, L. Greene and R. Bennett.
2. Barowsky, H.; Greene, L., and Paulo, D.: Paper read at Meeting of American Society for Gastrointestinal Endoscopy, Montreal, Canada, May 25-27, 1965.

SEARLE

Research in the Service of Medicine

squamous cell carcinoma of the lower lip, 84 per cent had no clinical evidence of cervical metastases on admission, 15 per cent did have cervical metastases on admission, and five per cent developed metastases later during the follow-up period.

Conclusion

A well planned wide local excision of carcinoma of the lip is required. When the lesion has been extirpated, then the requirements for function and form should be met. A modification of the Bernard-Burrow operation has been found most suitable for lesions of the lower lip as well as the upper lip. A radical neck dissection usually is not indicated primarily for cancer of the lip.

(*All cases from the Plastic Surgery Division, University of Texas Medical Branch, Galveston.*)

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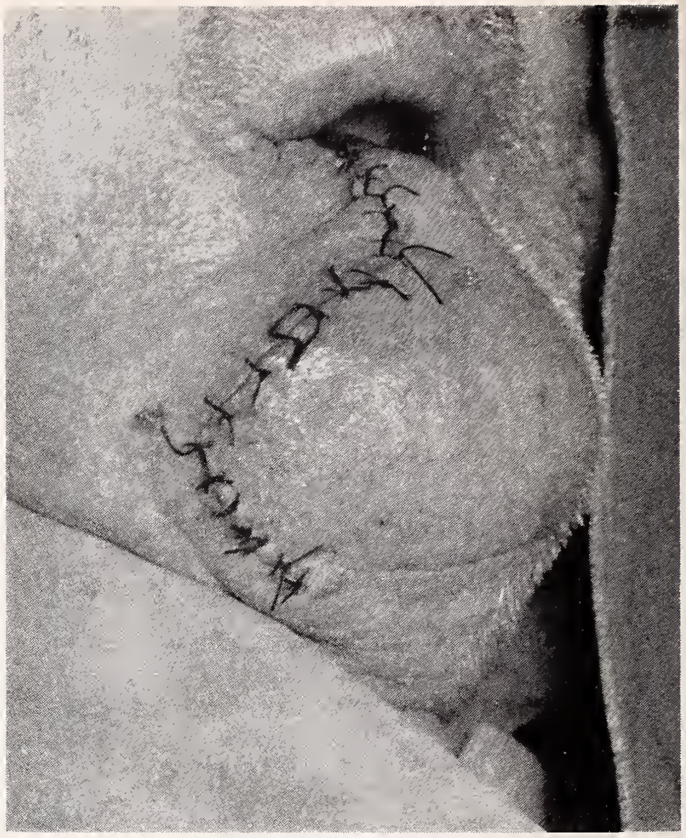

FIGURE VI
The operative defect has been closed. Stainless steel wire is used to reconstitute the muscular layer.

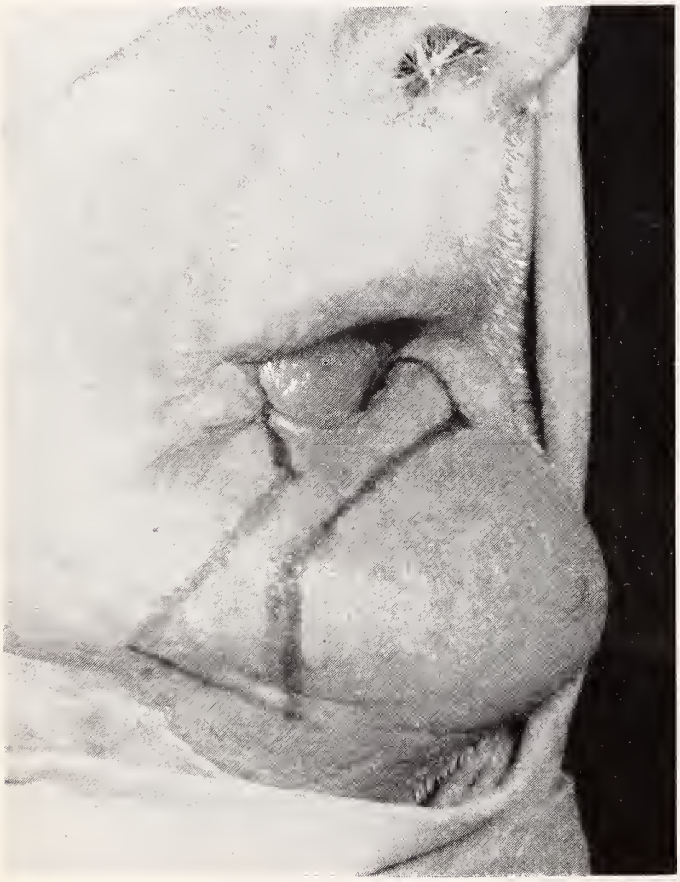

FIGURE V
Post irradiation, post cautery defect of right lower lip. Proposed incisions have been outlined with dye.

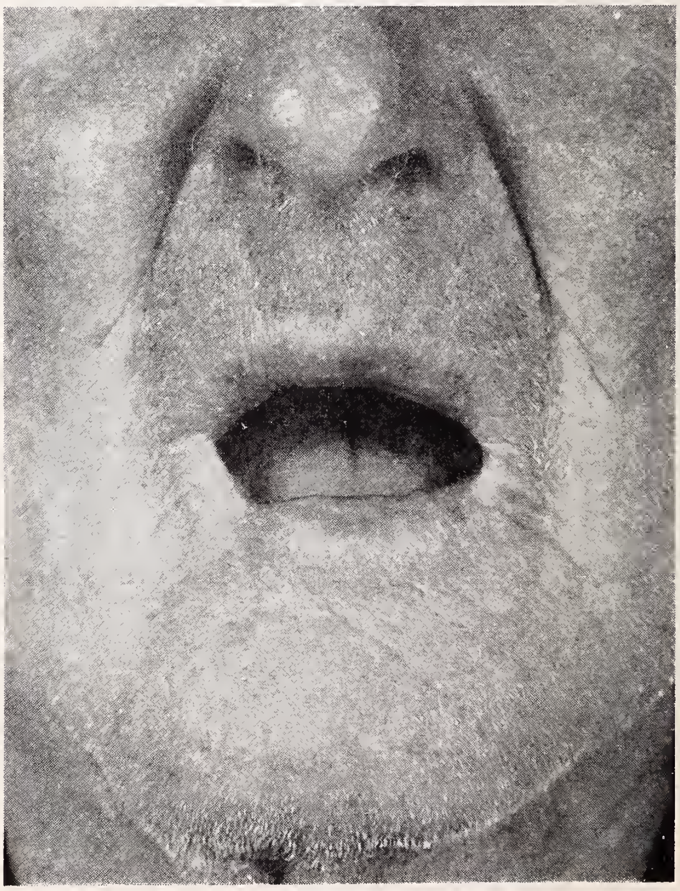

FIGURE VII
Lower lip two months postoperatively.

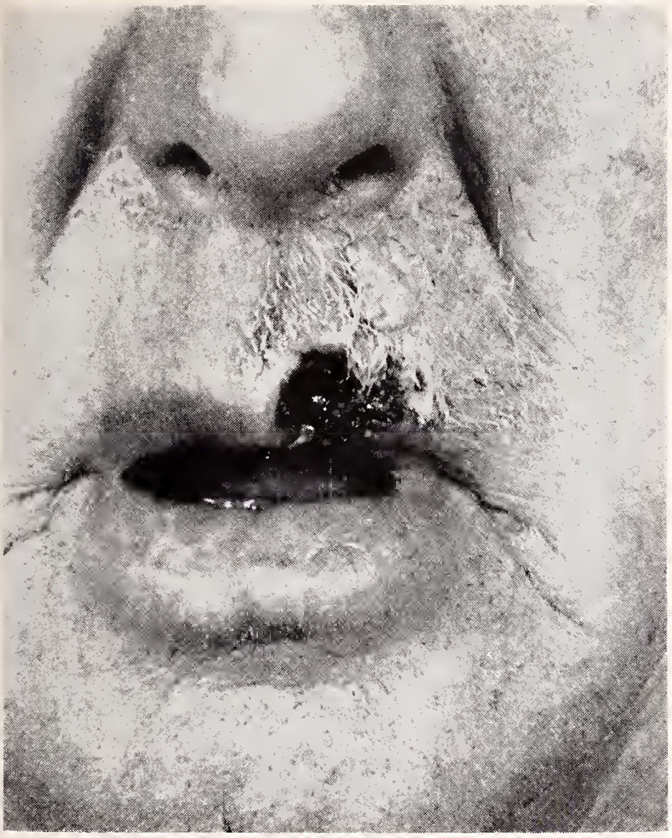

Figure VIII
Squamous cell carcinoma, left upper lip.

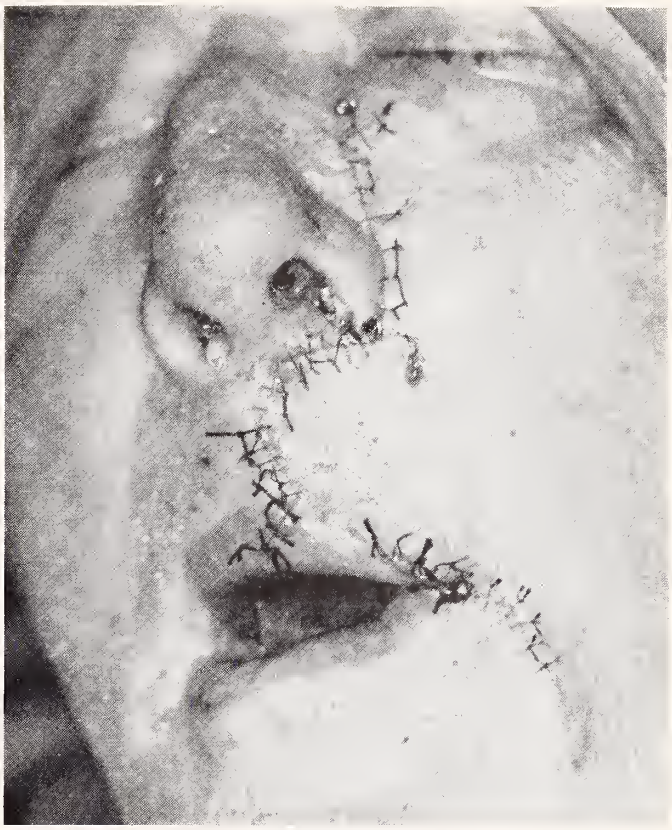

Figure X
The upper lip has now been reconstituted. 6-0 black silk has been used for the skin and a #36 stainless steel subcuticular pull-out wire has been also employed in the naso-labial area.

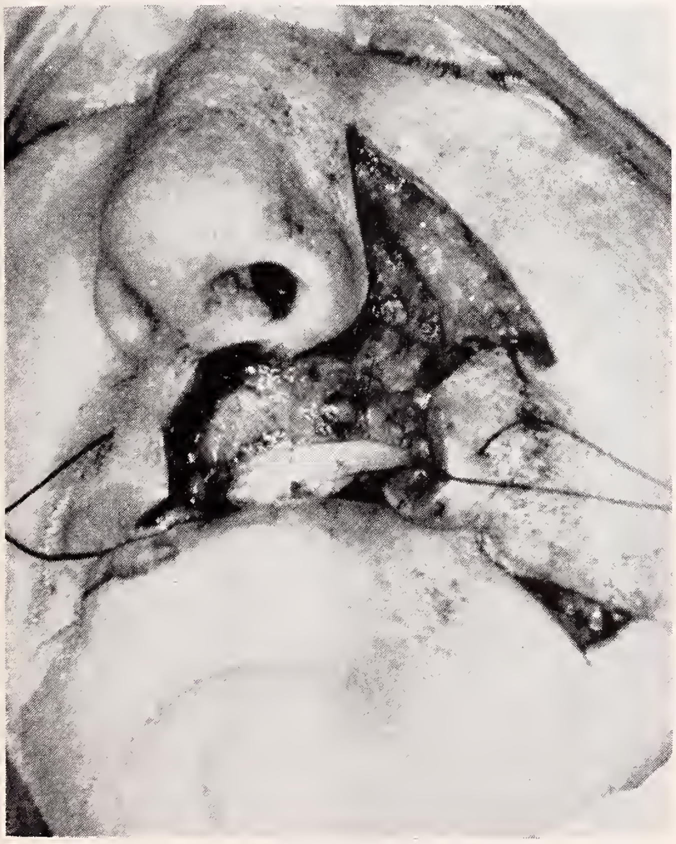

Figure IX
The lesion has been resected and triangles have been excised in the naso-labial and oral commisure area to facilitate closure.

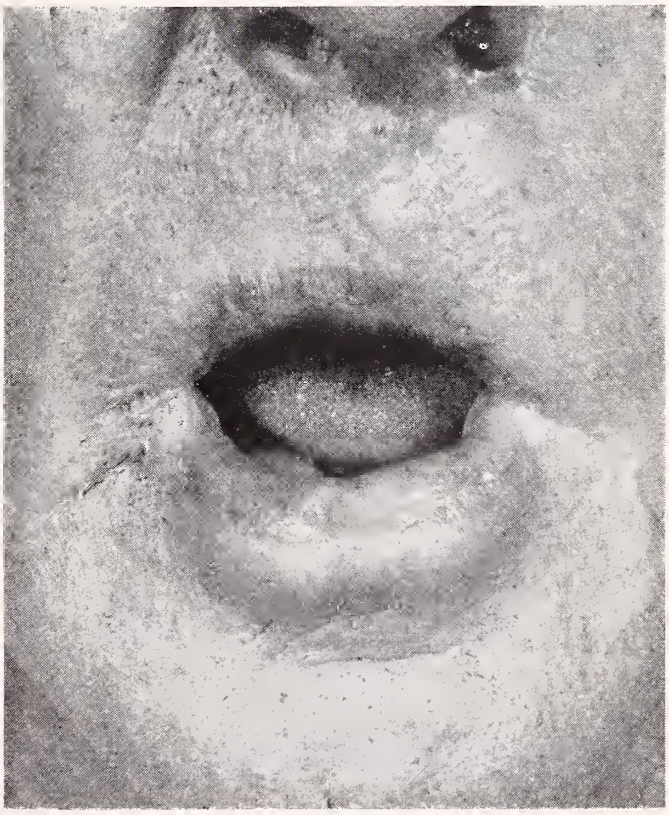

Figure XI
The upper lip two months postoperatively.

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PRENATAL OBSOLESCENCE

Civilized society, confronted by innumerable inconsistencies and strains, begins to knock and vibrate like an overheated motor. The long, slow turn of world-time as the geologist has known it, or the invisibly moving hour hand of evolution perceived only yesterday by the biologist, has given way in the human realm to a fantastically speeded-up social evolution induced by industrial technology. So fast does this change progress that a growing child strives to master the sociological mores of a culture which might, compared with the pace of past history, compress centuries of change into his lifetime. I myself, like many among you, was born in an age which has already perished. At my death I will look my last upon a society which, save for some linguistic continuity, will seem increasingly alien and remote. It will be as though I peered upon my youth through misty centuries. A mere statistical shadow, contingency, flickering and dancing amidst the whirl of great machines, will work that miracle of alienation. I will not be merely old: I will be a genuine fossil embedded in onrushing man-made time before my actual death.—Eiseley, L.: Freedom of the Juggernaut, *Mayo Clin. Proc.* 40:16) (Jan.) 1965.

The Contributions Of The Horse To Knowledge Of The Heart And Circulation

I. Stephen Hales And The Measurement Of Blood Pressure

H. E. Hoff, M.D., L. A. Geddes, Ph.D., and J. D. McCrady, D.V.M.

Introduction

> *Wherever man has left his footprint in the long ascent from barbarism to civilization we will find the hoofprint of the horse beside it.*—John Trotwood Moore

■ It was through Texas and New Mexico, imported by the Spanish colonists, that the horse came to this country, giving birth to two great horse-based cultures, those of the plains Indian and the western cowboy, both of which have left a truly lasting impression on the American way-of-life and its literature. In the old world the horse had already demonstrated his faithfulness in war and his usefulness in peace, and when the collar was introduced into Europe he proved so superior at the plow to the slow-moving ox that he inaugurated a whole era of agricultural prosperity in Europe which supported the burgeoning economy and culture of the Middle Ages. These great plow horses, ancestors of the Norman Percheron, the Belgian great horse, the Scottish Clydesdale and the English Shire and Suffolk, alone proved sturdy enough to bear the men and armor of that period and on their broad backs there developed a code of behavior that we still hope characterizes western man, and which we name after him, chivalry.

Today, after an almost total eclipse by the internal combustion engine, the horse is returning to favor, steadily increasing in numbers and in worth, and gaining new value for riding, racing and for the spectacles of circus, rodeo, show and sport. The veterinarian is again called to care for his special needs, and the physician is once more interested in applying lessons learned in the horse to human problems.

Equine diseases are, of course, of interest, for some of the diseases of the horse can be transmitted to man, notably glanders, anthrax, and certain forms of encephalitis. Clostridium tetani grows in his digestive tract and infects the ground he has occupied, but by now few of these constitute an important public health problem, and he has more than repaid man by serving for many years as a living manufactory for antitoxins. Today the pregnant mare is still an important commercial source of gonadotropic hormones.

Our own interest, however, centers on another aspect of the horse's value in medicine and we believe that many will be interested in an account of some of the contributions of the horse to the development of our present understanding of the function of the heart and circulation; they will immediately recognize their significance. These are: 1) The first measurement of blood pressure, carried out on the horse by Stephen Hales, and reported in 1733 in his famous volume on Hemastatics.[1] 2) The catheterization of the ventricular cavities by means of catheters inserted via the jugular vein and carotid artery into the right and left ventricles, respectively, which was first accomplished routinely by Claude Bernard and Francois Magendie in 1844. Extension of this technique of catheterization in the hands of Chauveau and Marey resulted in the determination of the sequence of beats in the heart and the pressures within the ventricular cavities. In the course of these studies, the latter workers noted the inverse relationship between blood pressure and heart rate which became known as Marey's Law, eventually leading to our knowledge of the carotid

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sinus reflex and its role in the regulation of blood pressure. 3) The discovery by Lewis of the syndrome of atrial fibrillation in the horse, which he used to establish the nature of this arrhythmia. 4) The experiments by Hope on the nature of the second heart sound, reported in the 1830's.

For the past five years the authors have held a summer workshop on "Classical Physiology with Modern Instrumentation," in which those experiments that lie at the very basis of our knowledge of Physiology have been reviewed with all the help afforded by modern electronic apparatus.[2] In the course of these sessions we have annually had the pleasure to be invited by the Faculty of the School of Veterinary Medicine of Texas A & M University to review in their well-equipped veterinary hospital those experiments and procedures that were first carried out on the horse. This series of four papers will describe these valuable contributions of the horse to our knowledge of the heart and circulation.

Stephen Hales And The Blood Pressure Of The Horse

Stephen Hales, a clergyman who was the first person to measure blood pressure directly, was born in the English county of Kent in 1677, to a family of adequate means and important connections. He went to Cambridge at the age of 19, staying on for a Fellowship and taking holy orders. In 1709 he was appointed curate of Teddington, in Middlesex, and here he made his home until his death in 1761. He was active in the life of his church and his parish, neglecting neither their physical nor spiritual improvement, but occupied himself also on a broader stage. He served at one time as one of the Trustees of the Colony of Georgia, whose Royal Governor, the naturalist John Ellis, named one of its most beautiful local plants, the Snowdrop or Silver-bell tree, Halesia, in his honor. He was chaplain to George III when this monarch was a prince.

It was, however, as a scientist that Hales is best known. He became interested in the chemistry of gases, collecting and manufacturing several of them, notably nitric oxide, which Mayow had observed to diminish the volume of ordinary air by a fifth, since it was further oxidized by the oxygen in air to another compound more freely soluble in the water over which the air was collected. In this way, of course, the oxygen in a trapped sample of air could be absorbed and its concentration in atmospheric air measured. By such experiments he served in no small measure to transmit the formulations of Mayow to Priestley, and thus deserves a legitimate place in the history of the discovery of oxygen.

Hales' studies on the pressure of the flow of sap, and of the swelling of seeds are among the first quantitative experiments in botany. His work on plant respiration no doubt influenced the later work of Priestley and Ingenhousz which established the nature of photosynthesis.

Hales was greatly interested in the application of scientific discoveries to the public health. He campaigned against the excessive use of alcohol, and devised systems for forced ventilation of enclosed and cramped quarters such as those in ships and prisons. These were in part adopted and were credited with genuine reductions in morbidity and mortality in such notoriously unhealthy localities as the Newgate prison.

For the simple clarity of demonstration, and the key they furnished to further discoveries, his physiological experiments are outstanding. The least known of these is his demonstration of spinal shock after decapitation of the frog, and the disappearance of all reflex activity when the spinal cord was subsequently destroyed by pithing. All of our subsequent knowledge of the reflex followed from this fundamental assignment of reflex activity to the spinal cord.

Hales experiments on blood pressure, for which he is renowned, were undoubtedly carried out in the winter of 1731-32, for they were reported to the Royal Society in the next Academic year of 1732-33, and recommended to be printed by the Council of that body in February of 1733. Their rationale was simple, and sprang from the implications of Harvey's discovery of the circulation and demonstration that the heart was the pump that forced the blood through its distributing and collecting vessels in the greater and lesser circulations. Hales expressed his approach to these studies in the leisurely prose of the day in his book Hematstatics (Figure I) as follows:[1]

"As the animal body consists not only of a wonderful Texture of solid parts, but also of a large Proportion of Fluids, which are continually circulating and flowing, through an inimitable Embroidery of Blood-vessels, and other inconceivably minute Canals: and as the healthy State of an Animal principally consists, in the maintaining of a due *Equilibrium* between those Solids and Fluids, it has ,ever since the important Discovery of the Circulation of the Blood, been looked upon as a matter well worth looking into, to find the Force and Velocity with which these fluids are impelled, as a likely means to give a considerable Insight into the animal Oeconomy."

It is apparent that the idea of measuring the blood pressure had long lain dormant in Hales' mind; as he wrote, "I endeavored about twenty-five years since, by proper Experiments to find what was

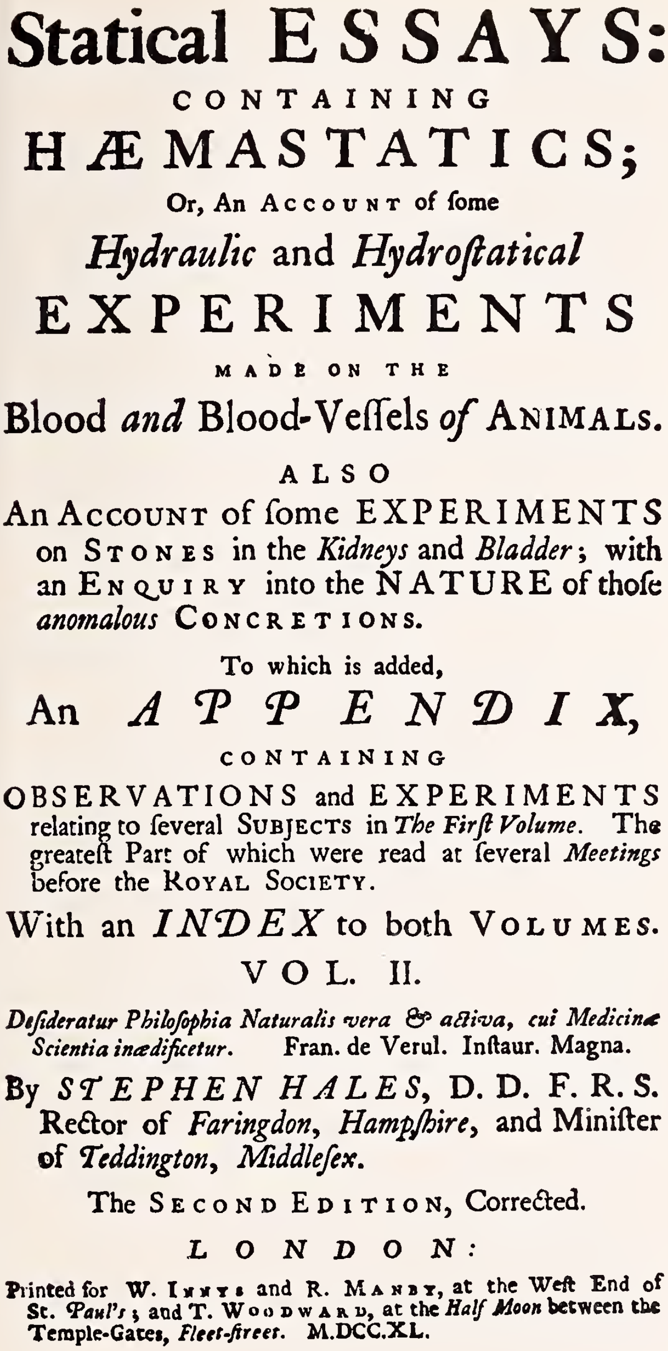

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Figure I

Title page from Hales', second of a two-volume series describing his "statical" experiments. The first volume dealt with "vegetable statics" and included Hales' chemical experiments on gases. The wide range of his studies in this volume is apparent from its title.

the real Force of the Blood in the crural Arteries of Dogs, and about six Years afterwards I repeated the like Experiments on two Horses, and a fallow Doe; but did then not pursue the Matter any further, being discouraged by the Disagreeableness of Anatomical Dissections." But as he gained confidence in the experimental method, and skill in its application, he returned again to the old experiments, surprised only that someone else with better qualifications had not already performed them, "especially in an Age and Nation that abounds with ingenious Persons, who are eminently skilled in Anatomy; and who have brought the Art of preparing and injecting the fine capillary Vessels, with proper-coloured ingredients, to a good Degree of Perfection."

His approach was simple and direct, and he stated it succinctly; "since we are assured that the animal Fluids move by Hydraulic and Hydrostatic Laws, the likeliest Way therefore to succeed in our Inquiries into the Nature of their Motions, is by adapting our Experiments to those Laws." So he proceeded to his first experiment:

"In December I caused a mare to be tied down alive on her back; she was fourteen hands high, and about fourteen years of age, had a Fistula on her Withers, was neither very lean, nor yet lusty: Having laid open the left crural Artery about three inches from her belly, I inserted into it a brass Pipe, whose bore was one sixth of an inch in diameter; and to that, by means of another brass Pipe which was fitly adapted to it, I fixed a glass Tube, of nearly the same diameter, which was nine feet in Length: Then untying the Ligature on the Artery, the blood rose in the Tube eight feet three inches perpendicular above the level of the left Ventricle of the heart: But it did not attain to its full height at once; it rushed up about half way in an instant, and afterwards gradually at each Pulse twelve, eight, six, four, two, and sometimes one inch: When it was at its full height, it would rise and fall at and after each Pulse two, three, or four inches; and sometimes it would fall twelve or fourteen inches, and have there for a time the same Vibrations up and down at and after each Pulse, as it had, when it was at its full height; to which it would rise again, after forty or fifty Pulses."

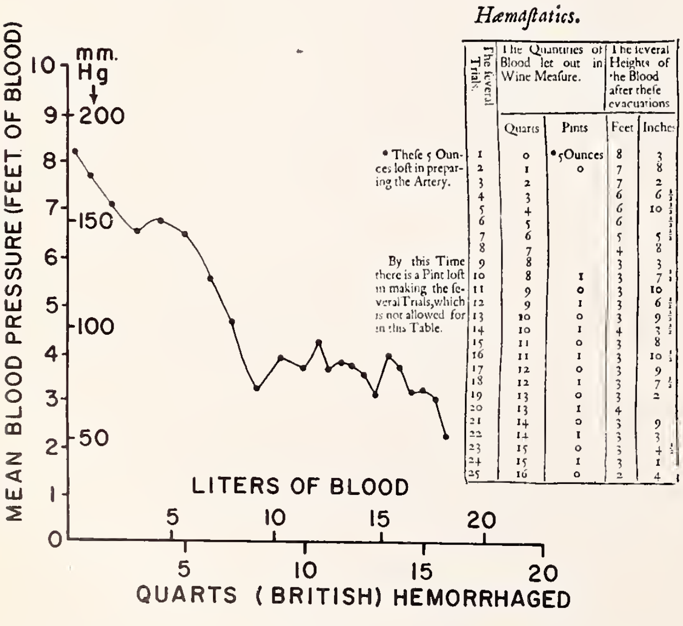
"The Pulse of a horse that is well, and not terrified, nor in any pain, is about thirty-six Beats in a minute, which is nearly half as fast as the Pulse of a man in health: This mare's Pulse beat about fifty-five times in a Minute, and sometimes sixty or a hundred, she being in pain."

"Then I took away the glass Tube, and let the blood from the Artery mount up in the open air, when the greatest height of its Jet was not above two Feet."

Hales was obviously studying a docile, unanesthetized horse. The hydrostatic pressure, which measured 8'3" of blood, is equivalent to a mean pressure of approximately 180 mm. Hg. From the data supplied by Hales it appears that the respiratory rate was unusually low, between one and two breaths per minute. To cause a pressure change of fourteen inches the depth of each breath must have been unusually large.

Hales concluded these observations by the first experiment on hemorrhagic shock, letting the blood escape a quart at a time until 8 quarts (British) had been withdrawn, measuring the pressure after each withdrawal. Thereafter the blood was withdrawn pint by pint. His table (Figure II) and his data, plotted by the authors, show the remarkable ability of the vascular system of the horse to combat hemorrhage. After eight quarts had been withdrawn the blood column stood at 3 feet 3 inches; after fifteen quarts had been removed, it still stood at 3 feet 1 inch. He called attention to the animal's restlessness after blood loss, to its rapid respiration, and to the appearance of "cold clammy sweats" as the last six pints were removed, and the pressure fell finally to only a few inches above the zero mark.

It was to take nearly a hundred years more before this direct manometry was more efficiently applied to determination of the blood pressure. Hales had indeed made use of the U-tube manometer in his study on plants to measure the pressure created by germinating peas but for some reason he never applied the instrument to the measurement of blood pressure. We must remember, however, that hydraulics was then in its infancy, the word "manometer" had not yet even been introduced into science, and the concept that water in a closed system "rose to the level of its source" was still an acceptable expression for most purposes. Just over the horizon, we now know, was Watt and the steam engine, and with the application of steam power to industry, the problem of boiler pressures was soon to be an important practical consideration. Then mercury manometers, spring-and-piston manometers and Schinz-Bourdon gauges would become items of common technical knowledge. Finally in 1828 Poiseuille,[3] a young French medical graduate, would measure blood pressure with a mercury manometer, and provide us with our units of blood pressure, millimeters of mercury. Two decades later Carl Ludwig[4] would lay the foundation for his fame by letting a float on the mercury carry a writing stylus by which the blood pressure could, so to speak, write out its own variations on the moving surface of a smoked drum. Not until the dawn of the 20th century would the determination of blood pressure become a routine measure in clinical medicine; it was Harvey Cushing[5] in 1903 who insisted that blood pressure readings be inscribed on a patient's record.



Hæmaſtatics.

The ſeveral Trials.	The Quantities of Blood let out in Wine Meaſure.		The ſeveral Heights of the Blood after theſe evacuations	
	Quarts	Pints	Feet	Inches
1	0	*5 Ounces	8	3
2	1	0	7	8
3	2		7	2
4	3		6	6 ½
5	4		6	10 ½
6	5		6	½
7	6		5	5 ½
8	7		4	8
9	8		3	3
10	8	1	3	7 ½
11	9	0	3	10
12	9	1	3	6 ½
13	10	0	3	9 ½
14	10	1	4	3 ½
15	11	0	3	8
16	11	1	3	10 ½
17	12	0	3	9
18	12	1	3	7 ½
19	13	0	3	2
20	13	1	4	
21	14	0	3	9
22	14	1	3	3
23	15	0	3	4 ½
24	15	1	3	1
25	16	0	2	4

* Theſe 5 Ounces loſt in preparing the Artery.

By this Time there is a Pint loſt in making the ſeveral Trials, which is not allowed for in this Table.

FIGURE II

Hales' hemorrhage table and a graph of blood pressure versus the amount of blood lost by the horse.

Hales' Experiment With Modern Instrumentation

Hales found these "anatomical studies disagreeable," though there is no doubt that the relatively small incisions involved were not seriously painful to the horses he studied. The low heart rates he reported, in the normal range for unanesthetized horses, attest to this. In the experiments we have ourselves performed, the animal was anesthetized to the level of surgical anesthesia. Three were tranquilized before being placed on the operating table and anesthetized. In the first of five horses, the femoral artery was cannulated because it was the artery Hales used; he called it by its old name, the crural artery. In the other four, the carotid was used because further dissection was to be carried out in the neck to gain access to the vagi and trachea. The vertical manometer was wetted with heparin solution to retard clotting although Hales made no mention of difficulty with clotting. The use of flexible plastic tubing was far more convenient than the brass pipes which he employed in the first experiment and the trachea of a goose which he used subsequently to connect cannula and manometer; rubber tubing was not to be used in the laboratory for another fifty years after Hales.

The heights attained by the columns of blood in these experiments were 79, 72, 84, 89 and 91 inches. Superimposed on these mean pressures were the pulsatile oscillations described so clearly by Hales, amounted to only a fraction of an inch. Respiratory variations in blood pressure varied from 2½ to 7 inches. The heart rates, 120, 130, 75, 72, 52-72 were much higher than those observed by Hales in the unanesthetized animal. The increased rate was probably due to the central effect of the anesthesia which is known to reduce the activity of the vagus nerves. The anesthetic also is known to stimulate sympathetic outflow, which increases heart rate and blood pressure.

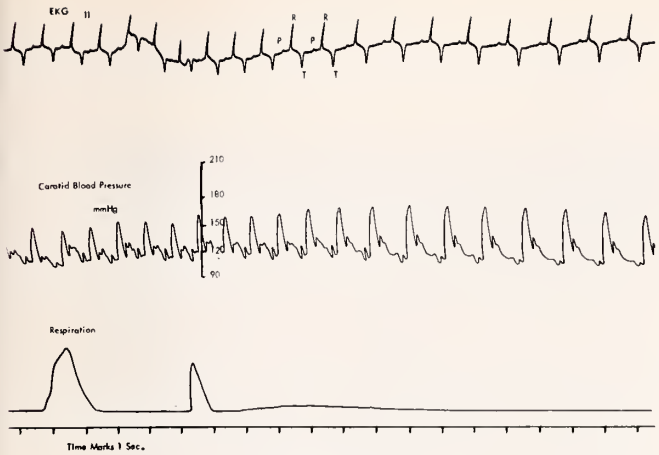


FIGURE III
Electrocardiogram, blood pressure and respiration of the anesthetized horse.

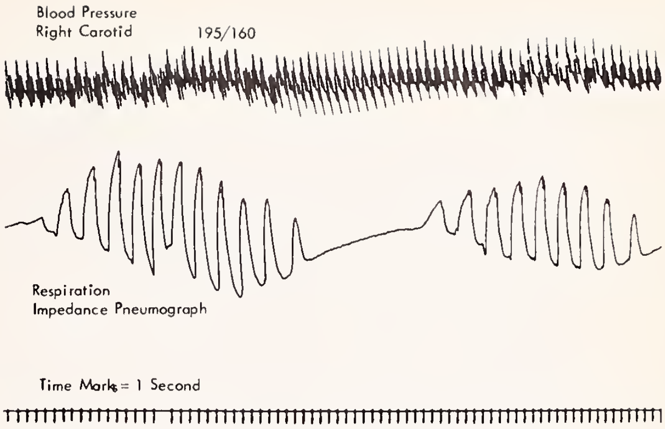


FIGURE IV
Blood pressure and Cheyne-Stokes' respiration in the anesthetized horse.

Graphic Recording Of Blood Pressure

After measurement of blood pressure with the vertical manometer, the artery was connected to a Physiograph pressure transducer for recording blood pressure. Electrocardiograph leads were attached and respiration was recorded, at first with a pneumatic chest band, and in later years by means of a device known as the impedance pneumograph[6] which measures the change in transthoracic conductivity accompanying respiration.

A typical record of the electrocardiogram (lead II), blood pressure and respiration, taken a few hours after induction of anesthesia, is shown in Figure III. Blood pressure was approximately 160/110 in this untranquilized animal, and, in the tranquilized animals, 195/160. In all animals, the elasticity of the huge vascular tree was revealed by the many recurrent oscillations following the dicrotic wave. In many of the animals, when the heart was slowed by vagal stimulation, five or more such after-waves were observed in the diastolic period. The respiratory variations in heart rate seen in most animals were rarely noted in the anesthetized horse. In Figure III, however, it is apparent that the heart did slow after the two breaths seen at the beginning of the record.

Respiratory Patterns

During the period of anesthesia, which usually lasted upwards of six hours before the animal was sacrificed, a variety of interesting respiratory patterns were recorded. In all animals the anesthetic depressed the respiratory rate, reducing it from one-half to two-thirds of the unanesthetized rate of approximately thirty breaths per minute. In many of the animals, respiration became periodic, occurring in clumps of breaths characteristic of Cheyne-Stokes' or Biot's respiration. An example of Cheyne-Stokes' respiration is shown in Figure IV. Despite the ominous nature of such respiratory rhythms when observed in the human, reflecting as they do gross alterations in the integration of the respiratory centers in the brain stem, the animals did well throughout the period of the exercises, and none required artificial respiration before the chest was opened.

It was possible on all occasions to obtain control data on the unanesthetized horse prior to surgery. As in all large animals, the heart rate was slow, ranging between 40 and 78 beats per minute. The respiratory rate varied between 10 and 30 breaths per minute. On two occasions it was possible to telemeter the electrocardiogram and respiration as the animal was pastured. Under these conditions heart rate was 40-44 and the animals respiratory rate was 18-30 per minute.

While observing the recordings taken from one animal in the pasture, we noted a transient rise in heart rate. Fortunately one of us was observing the animal and at this instant the animal's keeper had come into its field of view. In the other animal, we were surprised to note transient atrio-ventricular block occur as the horse quietly grazed. This record is shown in Figure V. Both events clearly demonstrated that animals like man are constantly adjusting their cardiorespiratory system to internal needs and external stimuli.

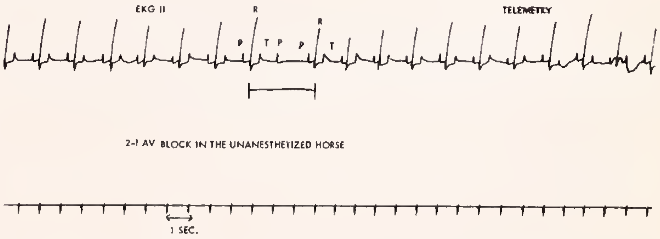


FIGURE V
Telemetry record of the ECG from an unanesthetized animal in the pasture. Note the transient A-V block.

Conclusion

The horse began his service to medicine when Stephen Hales first measured blood pressure by direct manometry and noted the effect of successive hemorrhages on the blood pressure. In so-doing he began a line of investigation of blood pressure, its maintenance in health and disease, and the pathological changes it undergoes, that is today still a subject of study and inquiry as it continues to hold its place at the very center of the vital functions.

Repetition of Hales' classical experiments with modern technical assistance confirms the experiments of more than two centuries ago, giving tribute to Hales' experimental skill and accuracy despite his primitive tools, and points out some of the ways in which further studies of this kind on the horse would yield information of value to the medicine of today.

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(*This is the first of a series of four articles.*)

STYLE IN MEDICAL WRITING

"Style is the art of being clear without being mean," Aristotle is alleged to have said. Clarity, lucidity, simplicity, brevity are all desirable and rare qualities in medical writing. The doctor who sits down at his desk to compose an article must, I think, be assailed by horrible doubts and fears. As a novice he tends to think that some rather unusual qualities are called for in this mode of expression. He sees his paper as something that may one day appear in the "literature" on the subject. That awful word literature! He becomes most self-conscious of himself as a writer of "Prose," spelt with a capital "P." Too often he thinks that good prose consists of long words strung together in long sentences. He writes: "It is my carefully considered opinion that," instead of "I consider" or "I believe," "All the available accumulated evidence goes to demonstrate that . . .", instead of "The evidence suggests . . ." And the author can give the evidence in his references. Then there is medical jargon. "The patient had no pathology." One might as well say "The patient had plenty of physiology." "He was a strangulated hernia." "She was a carcinoma breast." Such things are said in the wards of hospitals, and are a convenience to the user. Each profession and trade has its own forms of expression, but doctors seem reluctant to distinguish between the spoken and the written language.—Clegg, H.: An Editor's Prejudices, *Int. Rec. Med.,* vol. 168, Oct. 1955.

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THE PRESIDENT'S PAGE

QUO VADIS?

All New Englanders are used to change, especially in the climate. We are especially aware of these seasonal changes having just come through a most picturesque fall season with nature, after an unusually dry summer, showing us one of the most varied foliage patterns in recent years. In the months and years ahead the practice of medicine is to see more changes than the four seasons have presented us with in many years.

For example, the training of physicians to be specialists, which in the past and at present is carried out by programs and specialists based in hospitals, is destined for change if the "Coggeshall Report" is implemented in the future by the medical schools and their universities.

This report, entitled "Planning for Medical Progress through Education," was published in book form in April 1965, by the Association of American Medical Colleges. Its author is Lowell T. Coggeshall, M.D., Vice President of the University of Chicago and chairman of a special planning committee of the Association of American Medical Colleges which was appointed to study the Association's organization and plan its future direction. In essence the report indicates that the rise of specialization has led to fragmentation of the total education of the physician and that in the future total education of the physician, including medical school and graduate studies, interneship and residency programs, should be under the control of the university medical schools. This implies the elimination from educational programs of thousands of practicing specialists who educate residents in the hundreds of training programs in community hospitals throughout the land. Will such a change result in improved graduate education? Quo Vadis?

Again, the Medicare Law will bring more changes to the practice of medicine and the care of patients than have been seen since the earliest beginnings of medicine in the United States. Physicians will be charged with the responsibility of admitting or not admitting to hospitals those patients over 65 who request an admission whether or not their condition warrants it. Also the doctor must be more aware of the type and cost of drugs which he orders for these particular patients. Their utilization of hospital beds will be under closer scrutiny than any he has known to date, even in those hospitals with well-functioning utilization committees. And the physician will have to check utilization in hospital-affiliated convalescent homes, which will be an integrated part of medical care in the near future. Such utilization of beds will be under the direct scrutiny of the administrative agency for the Medicare plan. This agency is charged by the law to keep records of utilization by hospitals, physicians and even by disease entities. Quo Vadis?

Your president is interested in the thoughts of every member of the Connecticut State Medical Society on Medicare, medical education in the future, and what role each member believes his society should be carrying out in these important and changing medical times. He invites each and every member to write to him expressing his opinions and wishes concerning our society's role in Medicare's implementation.

It has been repeatedly stated that the individual physician has too long remained aloof from the changes all about him in social, economic and political spheres. These changes now affect all physicians and patients through the Medicare Law. Let all physicians study this law, learn its every meaning, talk about it with their colleagues and in their county societies. Such knowledge will be of help in the days to come in preserving, in so far as possible, the practice of medicine as we know it.

James R. Cullen, M.D.

FROM THE GENERAL MANAGER'S OFFICE

William R. Richards, m.d., *General Manager*
160 St. Ronan Street, New Haven, Conn.
Telephone 865 0587

James G. Burch
Director of Public Relations

Josephine P. Lindquist
Assistant to General Manager

CALL

SEMI-ANNUAL MEETING OF THE HOUSE OF DELEGATES

The 1965 Semi-Annual Meeting of the House of Delegates will be held at the New Haven Medical Association Building, 362 Whitney Avenue, New Haven, commencing at 2:00 o'clock in the afternoon of Thursday, December 9th.

James R. Cullen, President
Kenneth F. Brandon, Speaker of the House
Waldo E. Martin, Secretary

INTRODUCTION OF RESOLUTIONS

Article V, Section 12, Par. 3 of the Bylaws of the Society Provides that:

All resolutions to be considered as regular business at any regular meeting of the House of Delegates must be in the hands of the Speaker not later than seventy-two hours before the opening of that meeting. All resolutions and recommendations published in the official agenda distributed to the members of the House prior to the meeting at which action is to be taken shall be considered as regular business. Resolutions presented later than seventy-two hours before the opening of a meeting will be referred for consideration as regular business by the House only when they are presented by the Council or accepted for consideration by majority vote of the delegates present. Any resolution which does not qualify in accordance with the aforesaid provisions for consideration as regular business may be accepted for action by a majority vote of the delegates present and, if so accepted, shall be referred at once by the Speaker to a reference committee. Any such reference committee shall consider resolutions referred to it and shall report, with recommendations to the House before adjournment of the meeting.

SUMMARY OF ACTIONS COUNCIL MEETING

Thursday, September 23, 1965

I. Attendance

Present in addition to the Chairman, Dr. S. J. Martin, were: Drs. Cullen, Hess, Bradley, Goldberg, W. E. Martin, Weise, Sr., M. Caplan, Gardner, Brandon, Davis, Pitock, Rogol, Egan, H. Caplan, Spitz, Ayres, Nolan, Fabro, Epstein, Abbot, Petrie, Wilson and Roch. Also present were: Mrs. Lindquist, Mr. Burch, Mr. Chilcoat (AMA) and Dr. Richards. Absent were: Drs. Grendon, Hughes, Shepard, Ciccarelli, Cramer, and Hastings.

II. Routine Business

Approval Of Minutes

As printed and distributed, it was VOTED to approve the minutes of the meeting of July 21, 1965.

Life Membership

It was VOTED to approve applications for Life Membership of the following eligible Active Members of the Society:

John D. Booth, Danbury (F)
William F. Burke, Newtown (F)
Thomas F. Davis, Bridgeport (F)
William J. German, New Haven (NH)
Frank M. Goldys, Danbury (F)
Charles W. Nichols, Bridgeport (F)
Ralph D. Padula, South Norwalk (F)
Maurice M. Pike, Farmington (H)
Frank L. Polito, Torrington (L)
Ralph M. Tovell, West Hartford (H)

CSMS Dues Exemptions

It was VOTED to approve requests for exemption from payment of CSMS membership dues as follows:

John C. Murphy (FCMA)—Physical Disability
Edward E. Mardini (FCMA)—Military Service

Committee Resignations, Appointments, Etc.

Committee on Accident Prevention: It was VOTED to accept, with regret, the resignation of William B. Ellis, Hartford, as a member of this Committee.

Committee on State and National Public Relations: It was VOTED to appoint Max R. Goldstein, Hartford, to membership on this Committee, to replace William G. Leeds, West Hartford, resigned (7/21/65).

Communication—Connecticut Medical Servce, Inc.

It was VOTED to accept as information a communication from CMS, Inc. that no action by the Society is required in order that CMS can furnish prepaid medical care coverage for employees of the VISTA (anti-poverty) program. It was thought at first (7/21/65) that a special contract would have to be developed, with CSMS cooperation, to cover VISTA employees, but it has now been determined that one of the existing CMS contracts can be used for this purpose.

Date Of Next Meeting

Because Wednesday, October 13, has been found to conflict with an important meeting of the Committee on Hospitals, the Chairman has changed the tentative date for the next Council meeting to Sunday, October 17.

III. Old, New And Special Business

CSMS Delegate To The Vermont Medical Society

At the Council meeting of July 21, it was VOTED to accept the report of the Delegate to the Vermont Medical Society on his attendance at the VMS annual meeting, June 3-5, 1965. It having been brought to the Council's attention that the Delegate (Charles T. Schechtman, Hartford) had served the Society in this capacity for twenty consecutive years, it was VOTED to thank Dr. Schechtman for his twenty consecutive years of service to the Society as a Delegate to the Vermont Medical Society.

Communications—Committee On Public Health

Acting on a recommendation of the Committee that "the Council bring to the attention of all county medical association committees on public health the increasing maternal and neonatal mortality rates and suggested reasons therefor, and urge such committees to consider their local situation with a view to remedial measures" it was VOTED to request the Committee on Public Health to confer with the CSMS Committee on Maternal Morbidity and Mortality and the Committee to Study Perinatal Morbidity and Mortality (both of which are active in this field) with a view to pursuing a study of neonatal mortality jointly with them and, therafter, to communicate directly with county association committees on public health to further the purpose stated in the recommendation of the Committee.

HCMA Proposal Re CSMS Relative Value Schedule

In a letter dated September 13, 1965, Charles Polivy, President of the Hartford Association, requested consideration of a proposal which would permit distribution of the CSMS Relative Value Schedule to physicians in that county who had applied for, but were not yet, regular members of the HCMA or of the Connecticut State Medical Society. Finding merit in Dr. Polivy's proposal, but feeling bound by the House of Delegate's action (April 28, 1965) to limit such distribution to "members of the Society," it was VOTED to approve a more general proposal as follows:

> That, upon request by a county medical association, the Society will furnish a "preliminary CSMS Membership Kit (including the RVS)" *directly* to any licensed physician who has applied (and been approved by a credentials committee) for membership in that county association, and that such a mailing will be consummated upon receipt at 160 St. Ronan Street, New Haven, of the name and address of the physician who has so applied.

It was further VOTED to inform all eight component county associations of the availability of this service of the Society. Such membership kits are currently being prepared by the Public Relations Director.

Appointment Of CSMS Participant—Pharmaceutical Meeting Program

At the request of H. G. Hewitt, Dean of the UConn School of Pharmacy, it was VOTED to appoint Max Caplan, Meriden, AMA Delegate, to serve as a panelist on a program which will be held at Hartford, October 24-26, under the auspices of District No. 1 of the National Association of Boards of Pharmacy and the American Association of Colleges of Pharmacy. The panel discussion in which Dr. Caplan will participate is to take place on Monday, October 25, and Dr. Caplan's subject will be: "The Impact of Medicare on Medicine."

Appontment Of CSMS Representatives—Advisory Committee On Public Health Nursing

At the request of Mrs. Norma C. Lundquist, Chief of the Public Health Nursing Section, it was VOTED to ask the President, Dr. Cullen, and the Chairman, Dr. S. J. Martin, to appoint two CSMS members to serve with the Advisory Committee on Public Health Nursing, Connecticut State Department of Health. The suggested term of appointment is for two years each.

The two CSMS members appointed are:

Orvan W. Hess, New Haven
W. Holbrook Lowell, Hartford

Request For Nominations—CHA "Hospital . . . Survey And Plannng Commisson"

In a letter from T. Stewart Hamilton, M.D., Chairman of the CHA's Ad Hoc Steering Committee for the "Connecticut Hospital and Related Health Facilities Survey and Planning Commission," to James R. Cullen, CSMS President, the Society is invited to submit a slate of nominees (up to sixteen in number) to fill four commission posts to represent the medical practitioner.

After considerable discussion, it was VOTED not to make such nominations at this meeting but to request Dr. Cullen to convey to Dr. Hamilton the Council's sense of disappointment at the rather minimal representation of medical practitioners planned by the Commission, and at certain other terms of participation offered to the Society; to seek to arrange a liaison meeting between an Ad Hoc Committee of the Society (members of the Council and others, to be chosen by the Chairman) and the Ad Hoc Steering Committee of CHA, for the purpose of reviewing these and related matters concerning the Society's participation in the Planning Commission; and to inform the governing bodies of the component county medical associations of this action (including information about the Planning Commission itself, and the "terms of participation" which have been offered to the Society), and to invite their open discussion and advisement to the Council of their respective opinions concerning same.

Communication From Commissioner Foote Re Medicare Law

In a letter to the Council, dated September 9, 1965, Commissioner Franklin M. Foote of the State Health Department informs the Council that Governor Dempsey has designated his Department as the state agency to implement those portions of the new Medicare Law (Part I-A) which deal with accreditation of hospitals, extended-care facilities and home care agencies to furnish services to Medicare patients and to be reimbursed for same. Dr. Foote foresees that there may be certain difficult problems associated with completing this accreditation project and states he would welcome the advice and assistance of the Society to help guide his Department in its work. He has already made plans to meet with the CSMS Committee on Hospitals to discuss several aspects of the undertaking, and with the Committee on Public Health to discuss several others.

It was VOTED to convey to Commissioner Foote the thanks of the Council for his invitation to the Society to work jointly with him in these matters, and to invite him to join the Council at its next meeting for the purpose of determining in what specific ways representatives of the medical profession might be of help to him and his associates in carrying through the accreditation program for Connecticut facilities under Part I-A of the Medicare Law.

CSMS Representative—AMA National Symposium On Venereal Disease Control

In response to a request from AMA to designate a representative to attend and participate in this Symposium, Chicago, November 20, 1965, it was VOTED to ask Hyman A. Levin, New Haven, to serve in this capacity, and to file a report with the Council on the proceedings of the meeting. It was further VOTED to reimburse Dr. Levin for usual expenses incurred by his attendance.

1965 Amendments To The Connecticut MAA (Kerr-Mills) Law

Having been apprised that an amendment to P.L. 578 had been passed by the 1965 General Assembly which, by interpretation of the Attorney General, has caused the Welfare Department to discontinue payments to physicians for inhospital services rendered to MAA patients (effective October 1, 1965), it was VOTED to request the President, Dr. Cullen, and the Chairman, Dr. S. J. Martin, to seek an audience with Governor Dempsey for purposes as follows:

1. To inform him that practically everyone concerned (Commissioner Shapiro, members of the General Assembly, etc.) agrees that the Attorney General's interpretation of the amendment is contrary to the "intent" of the legislature, and that the wording of the amendment which resulted in his interpretation was "unintentional" and "inadvertent."
2. To advance to the Governor the point of view that the "money" aspect of the Attorney General's interpretation of the amendment is relatively inconsequential (being less than 1 per cent of all MAA expenditures, and provided for in the 1965-67 budget), but that the denial of free choice of physician to MAA patients and interruption of continuity of care by the attending physician when the patient is hospitalized is considered to be of far greater moment and concern to the Council.
3. On the basis of this information, and the Council's evaluation of the untoward effects of the amendment as interpreted by the Attorney General, to ask the Governor to use his good offices to bring about an application of the amendment which is in keeping with the intent of the General Assembly to expand and supplement MAA coverage of physicians' and other services; *not* to curtail or eliminate such coverage.

Special Convention Of AMA House Of Delegates October 2-3, 1965

The Council was informed that, on petition of 37 AMA Delegates representing 18 state medical societies, a Special Convention of the AMA House of Delegates has been called for October 2-3 at Chicago. In conjunction with this meeting, a one-day Conference on Medicare will be held on October 1.

After a protracted period of discussion, during which every member of the Council present was invited to express his personal and "grass roots" view on the subject of Medicare and its implementation in 1966, the following actions were taken:

1. It was VOTED to authorize a full complement of representatives of the Society to be present at the Special Convention and Medicare Conference, and to authorize reimbursement of their usual expenses for same. The delegation will consist of (presuming all attend) 3 AMA Delegates, 3 Alternate Delegates, the President, the President-Elect and the General Manager.

2. It was VOTED to send the Delegates *uninstructed* as to opposing or supporting any specific points of view or courses of action.

3. As offered by E. Tremain Bradley, Vice-President, it was VOTED to adopt and transmit to the Special Convention of the AMA House of Delegates a resolution as follows:

Title: REPEAL OF THE MEDICARE LAW.

Whereas: P.L. 89-97, the so-called Medicare Law, is considered by most practicing physicians to be a definite hazard to the quality of medical care in the United States, and

Whereas: By diligence and unity of purpose, the physicians of Australia have succeeded in invalidating a similar law, therefore be it

Resolved: That the American Medical Association and its state and county components while advocating that physicians seek to practice within the letter of the Medicare Law, conduct a vigorous and unrelenting campaign of education and legislative activity directed toward repeal of the Medicare Law by the Congress, thereby remedying this injury which is being inflicted upon our profession and the American public.

4. It was VOTED that, following the Special Convention, and subsequent to a report on same being filed with the Council by the Delegates and others, the President, the AMA Delegates and the General Manager prepare an informative report on the proceedings of the Convention for direct mailing to each member of the Society. It is understood that such a report to the membership would also include pertinent actions and recommendations of the Council which are taken or made with reference to those of the Special Convention of the AMA.

Request—Mental Health Planning Project, Connecticut

In the Spring of 1965, the Society co-sponsored with CMHPP and other agencies a "Leadership Conference on Regional Use of Manpower for Mental Health" and, from the American Medical Association, obtained funds to help finance the Conference.

In a letter from CMHPP, dated September 13, the Society is invited to co-finance the publication and distribution of the proceedings of the Conference, on the basis that 1000 copies will cost approximately $750 to print.

It was VOTED to give the CMHPP $150 as a contribution of the Society toward completing this project.

Joint Publication Of Booklet By CSMS And CPA

At the Council meeting of July 21, it was voted to approve the text of a proposed booklet, titled: "Guiding Principles for Pharmacist-Physician Relationships in Connecticut," which had been prepared by the Joint Conference Committee of the Society with the Connecticut Pharmaceutical Association, and to express willingness to consider a plan to co-finance printing and distribution of the booklet when such a plan had been developed.

At this meeting, it was VOTED to approve a plan submitted by the JCC as follows:

(a) Of the total cost of $210 to print 10,000 copies, to contribute one-half ($105) as the Society's share.

(b) The 10,000 copies will be divided so as to give CSMS 6500 and the CPA 3500.

(c) Each participating organization will distribute the booklet to its own members in whatever manner it chooses. The JCC also recommends that it also be mailed to non-members and, on a continuing basis, to newly-licensed practitioners of both professions.

It is understood that distribution by CSMS (c) will be left to the discretion of the General Manager and PR Director, both as to method and scope.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on September 23, 1965. Detailed minutes of the meeting are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

SUMMARY OF ACTIONS
COUNCIL MEETING
Sunday, October 17, 1965

I. Attendance

Present in addition to the Chairman, Dr. S. J. Martin, were: Drs. Hess, Bradley, W. Martin, Weise, Sr., M. Caplan, Gardner, Rogol, Grendon, Egan, Shepard, Ayres, Nolan, Ciccarelli, Cramer, Fabro, Abbot, Wilson and Roch. Also present were: Mr. Burch, Mr. Chilcoat (AMA), Dr. B. F. Mann, Jr., Chairman of the CSMS Committee on Health Careers, and Dr. Richards. Absent were: Drs. Cullen, Goldberg, Davis, Pitock, H. Caplan, Spitz, Hughes, Epstein, Petrie, Brandon and Hastings.

II. Routine Business

Approval Of Minutes

As printed and distributed, it was VOTED to approve the minutes of the meeting of September 23, 1965, it being noted that the Chairman had appointed Orvan W. Hess, New Haven, and W. Holbrook Lowell, Hartford, to serve as CSMS representatives on the Advisory Committee on Public Health Nursing, Connecticut State Department of Health.

House Of Delegates—Date And Place Of 1965 Semi-Annual Meeting

At the suggestion of Max Caplan, Meriden, it was VOTED to hold the 1965 semi-annual meeting of the House of Delegates in New Haven County, subject to approval by the Board of Governors of NHCMA.

Dr. Caplan subsequently informed the General Manager's office that the date would be Thursday, Decmeber 9, 1965, the time 2:00 P.M., and the place the New Haven Medical Association Building, 362 Whitney Avenue, New Haven.

Date Of Next Meeting

The next meeting was scheduled for Wednesday, November 17, 1965.

III. Old, New And Special Business

CHA "Hospital And Related Health Facilities Planning Commission"

Dr. S. J. Martin reported that he and President Cullen were making arrangements for a liaison meeting betwen representatives of the CHA and an Ad Hoc Committee of the Society at which it was proposed to hold a joint discussion of the terms of participation in the "Planning Commission" which had been extended to the Society by CHA. Dr. Martin also announced the appointment of the CSMS Ad Hoc Committee as follows:

James R. Cullen, Hartford, Chairman
Orvan W. Hess, New Haven
John R. Egan, Old Saybrook
Leopold M. Trifari, Hamden
Waldo E. Martin, Milford

1965 Amendments To The Kerr-Mills (MAA) Statutes

Dr. S. J. Martin reported that, as directed by the Council (9/23/65), he and President Cullen had contacted Governor Dempsey concerning the 1965 amendments to the MAA Statutes and the interpretation given same by the Attorney General's office which resulted in discontinuance of the privilege of MAA patients to choose and retain their personal physicians when inhospital care became necessary. The Chairman reported that the Governor shares our view that an "unfortunate legislative oversight" has occurred, and has given assurance that "the administration will take all appropriate steps to deal with this situation."

Reports—Committee On Third Party Payments

Having been asked by the Council to study and report on two resolutions adopted by the AMA House of Delegates at the June ,1965, meeting, the Committee filed such reports as follows:

"The Committee recommends that the Council support the principle embodied in:

'Resolved: That the AMA seek the provision for and the appointment of representative physicians as advisory committees to all federal programs which relate to health care; and be it further

Resolved: That the state medical societies are urged to similarly work towards the establishment of medical advisory committees, composed of representative practicing physicians in the state or local community, to guide and advise state and local health care programs."

"The Committee recommends that the Council support the principle embodied in:

'Resolved: That this House of Delegates record itself as approving and supporting the principle that Blue Shield medical-surgical insurance benefits should be paid only to private physicians for eligible professional services personally rendered to their private patients, and be it further

Resolved: that this House of Delegates report its action to the National Association of Blue Shield Plans and to all constituent associations and component societies of the AMA for the purpose of encouraging widespread adherence to this principle."

It was VOTED to approve the reports on these two AMA resolutions filed by the Committee on Third Party Payments.

Incorporation Of The "Connecticut Health Careers Council"

Bernard F. Mann, Jr., Chairman of the CSMS Committee on Health Careers and CSMS representative to the Ad Hoc Planning Committee for the "Connecticut Health Careers Council," joined the Council members at this meeting to report on the progress which has been made by the Ad Hoc Planning Committee toward incorporating the CHCC. After hearing Dr. Mann's report, and reviewing the opinion of the CSMS legal counsel concerning protection of the Society's proper interests under the proposed bylaws for the CHCC, it was VOTED to approve the Society's becoming a "Sponsor" of CHCC, and to authorize Dr. Mann, as a CSMS representative, to become an "Incorporator (Member)" of CHCC at the time of its incorporation (planned for November 17, 1965).

Medicare Conference And Special Convention Of AMA House of Delegates

Drs. Gardner, Weise, Max Caplan (AMA Delegates), Dean (Alternate AMA Delegate), Hess (President-Elect), and Richards (General Manager) reported on the proceedings of the Medicare Conference (Chicago, October 1) and the actions taken by the Special Convention of the AMA House of Delegates (Chicago, October 2-3, 1965).

Dr. Dean, being unable to attend this meeting, filed his report in writing. It was VOTED to acknowledge, with thanks, receipt of his report. The others were present in person, and made their reports verbally.

It was the consensus of those who attended the Medicare Conference that the speakers representing HEW, Blue Cross, Blue Shield, the American Hospital Association, the Health Insurance Association and others, demonstrated a collective cognizance that effective implementation of the Medicare Law is going to be a monumental task and one beset by many sticky problems for all concerned. While declaring that they intended to go ahead with "the job" assigned to them by the Congress, come what may, they appeared sincere in their stated desire to "cooperate" with the medical profession and its official representatives to the fullest extent possible. The reports also stressed the fact that, oftener than not, questions and requests for information from the audience were responded to by these speakers in general terms: "We can't give any specific answer to that question at the present time. It's something that is going to have to be worked out."

Reports on the Special Convention of the AMA House related that, during the hearing before the Reference Committee on Public Relations and Legislation, 125 speakers testified on some twenty different subjects (mostly bearing on the Medicare Law) over a time period of nearly eight hours. The report of the Committee, as adopted by the House of Delegates, established policy statements on such subjects as: The legal considerations of Medicare as they affect the patient-physician relationship; the areas of harmony and possible conflict wherein the principles of medical ethics may be confronted with provisions of the Law and, subsequently, by regulations promulgated by HEW; the "hospital utilization review committee" and its possible impact on current admitting and discharge procedures and on the medical management of patients by their personal physicians; the designation of a "fiscal intermediary" for Medicare's voluntary supplementary insurance programs by state or local medical societies; the advantages and disadvantages of "direct billing" vs. "acceptance of assignment" for doctors' services under Medicare; and many more.

Following prolonged discussion of the content of these reports, the Council received a report, with recommendations, prepared and submitted by the Ad Hoc Committee on Medicare Planning (Max Caplan, Chairman). It was VOTED to accept the report of the Ad Hoc Committee, with minor amendments, which called for the following action:

"To publish as a Supplement to CONNECTICUT MEDICINE, and distribute to all members of the Society, a booklet containing the text of an 'assessment of the professional implications of the Medicare Law' (prepared by the General Manager), a reproduction of the CSMS policy statements re the patient, the physician, and third party entities (adopted by the CSMS House of Delegates, 1963) a reproduction of the *AMA Principles of Medical Ethics,* and a series of "capsule" policy statements on Medicare which had been prepared by the Ad Hoc Committee."

Without formal vote, it was decided:

(a) Not to designate any "fiscal intermediary" for Part B contracts in Connecticut, unless and until a request has been received for the Society to do so.

(b) To await request and/or direction from the sections and groups in Connecticut having to do with hospital-based specialties (radiology, pathology, anesthesiology and physiatry) before supporting the positions adopted by such sections and groups regarding the direct billing of patients for services performed by practitioners of these specialties separately from charges imposed by hospitals.

(c) To accept as information, and for future reference, a communication from the Medical Staff of the Hospital of St. Raphael, New Haven, reporting that the Staff "goes on record as favoring the policy that the (Medicare) utilization review committees which are to be formed at various hospitals be elected by the general staffs of the hospitals so involved."

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on October 17, 1965. Detailed minutes of the meeting are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

PLACEMENT WANTED

GENERAL SURGEON — Board certified, 33 years of age, Connecticut license. Would like to form an association with a group or partner. Has special training in vascular surgery.

GENERAL SURGEON — Board certified, 36 years of age, Connecticut license. Military obligations completed. Available immediately, interested in group or associate practice.

GENERAL SURGEON — Board eligible, excellent background in surgery, with sub-specialty in neo-plastic surgery. Available immediately, with willingness to go into General Practice, as well as surgical practice. Military obligations completed.

UROLOGIST—34 years of age, Board certified, University trained. Would like to practice with either a group or partner. Extensive hospital experience, presently Instructor in Urology at large University Medical Center.

OBS.-GYN.—Board eligible, Connecticut license. Military obligations recently completed. Would like to practice with either partner or group. Available immediately and has an interest in Greater Hartford Area.

OBS.-GYN.—33 years of age, Board eligible, military obligations completed. Interested primarily in an associate practice. Available as of January 1.

PLACEMENT OPPORTUNITIES

PSYCHIATRISTS & GEN'L. PRACTITIONERS desirous of part-time or full-time employment in a modern progressive State Mental Hospital are needed. Please contact John F. Lowney, Jr., M.D., Superintendent; Connecticut Valley Hospital; Box 351, Middletown, Connecticut.

PHYSICIAN AND INTERNIST for Chronic Disease, Cancer and Tuberculosis Hospital. Must have a Connecticut license and Board eligibility or equivalent experience. Salary range $13,420 to $17,600. Three bedroom, two bath apartment available with maintenance at minimal cost. Liberal fringe benefits and insurance. Reply to Uncas-On-Thames Hospital, Norwich, Connecticut.

CHIEF, HOSPITAL SECTION—to head program of inspecting and licensing medical care facilities in the state as required by statute; directs the Hill-Harris program at state level. Requires completion of general internship in A.M.A. approved hospital plus a combination of experience totaling five years and made up of one or several of the following elements: up to two years in an approved residency in any field in a hospital with a teaching or educational program; up to two years of graduate study in hospital administration or public health; employment in hospital administration; experience as a staff committee member or on any staff service while holding full hospital privileges. Reply to B. Dearington, Connecticut State Department of Health, 79 Elm Street, Hartford. EQUAL OPPORTUNITY EMPLOYER.

OCCUPATIONAL PHYSICIAN for state em-employees' clinic located in Hartford, 35 hour week, 3 weeks vacation, up to 120 days sick leave, paid insureance program, social security and liberal benefits for retirement. Requires at least two years' general practice. Starting salary $12,040 going up to $13,000 at the end of first year, then advancing $560 annually to maximum of $15,080. Reply directly to B. Dearington, Connecticut State Department of Health, 79 Elm Street, Hartford. EQUAL OPPORTUNITY EMPLOYER.

OBS.-GYN. — Board certified or Board eligible Obs.-Gyn. to serve 65 beds, fully accredited licensed Maternity Department rural hospital which takes care of two communities of about 40,000 total population.

ANYONE INTERESTED IN THE ABOVE IS ASKED TO CONTACT THE GENERAL MANAGER'S OFFICE, 160 ST. RONAN STREET, NEW HAVEN.

1965 MEETINGS

November 28-December 1—19th Clinical Convention of the American Medical Association to be held in Philadelphia, Pennsylvania.

December 8—Connecticut Society of American Board Surgeons Annual Meeting to be held at the Hotel America in Hartford, Connecticut.

1966 MEETINGS

April 26-28—174th Annual Meeting of the Connecticut State Medical Society to be held at the Statler-Hilton Hotel, Hartford, Connecticut.

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1. Schleif, R.H.: J.A.PH.A., 46:179,1957 *U.S. Pat. No. 3,062,714

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FOR INFORMATION: WRITE OR CALL

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St. Barnabas Hospital
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Phone (212) CYpress 5-2000

TB Still Serious Disease

Tuberculosis-caused deaths have declined dramatically in the U. S. during the past 60 years, but there are over 9,000 deaths and 50,000 new cases of TB in the country each year, and increasing rates have been reported in some cities.

Nonwhite TB death rates remain 2½ to 3½ times higher than those of whites, and three times as many males as females die from tuberculosis, according to a report in the current Journal of the American Medical Association.

The report by Theodore C. Doege, M.D., of the department of preventive medicine, University of Washington School of Medicine, Seattle.

"These facts . . . remind us that tuberculosis remains a significant health hazard. About 75 per cent of new cases occur among the estimated 35 million tuberculin-positive individuals, with persons among lower socioeconomic groups and in metropolitan areas, the elderly, and the chronically ill being at special risk," said a JAMA editorial.

Measures which will help break the chain of tuberculosis infection, said the editorial, include tuberculin tests and chest X-rays of case contacts, establishment of case registries, chemotherapy and long-term follow-up of cases, BGG vaccination, and use of the chemical isoniazid in treating TB.

From 1900 to 1960, tuberculosis death rates in the U. S. fell from 194.1 to 6.1 deaths per 100,000, the report said.

Decreases in the death rate began in the latter part of the 19th century, Dr. Doege said, and preceded by more than 50 years the introduction of antituberculous chemotherapy and antibiotics.

"Thus, the history of tuberculosis mortality underscores the concept that dramatic decreases in death rates from an infectious disease may be related to environmental changes in working conditions, nutrition, sanitation, and housing, as well as to dramatic medical advances," the report said.

"It is a safe assumption that social and economic influences are also of great importance in the consistently higher tuberculosis rates among nonwhites," Dr. Doege said.

Men have higher TB death rates than women, except in the 5-to-25-year age group. The higher female rate in this group may be due to factors associated with stress, childbearing and childrearing, the report said.

Reasons for the otherwise higher mortality rates in males are not clear, the report said. Possible reasons are improvements in women's home and working conditions, their generally better record of following medical advice, and the greater prevalence of chronic disease in men, the report said.

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Average Dosage: One tablet (100 mg.) daily with breakfast.
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For full details, see the complete prescribing information.

*Dorhout Mees,E.J.,and Geyskes, G.G.: Acta med.scandinav. 175:703,1964.

Photos: A 59-year-old woman with hypertensive cardiovascular disease and edema resistant to low-salt diet and bed rest. The patient lost 8½ lbs. in one week with a single tablet daily of Hygroton, brand of chlorthalidone.

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Letters To The Editor

To The Editor:

CIRCULAR LETTER #8

To: Physicians, Dentists, Veterinarians

Your attention is invited to certain Public Acts effective October 1, 1965, passed by the Connecticut General Assembly of 1965 which may be pertinent to your practice, as follows:

Public Act 376. "(1) Each physician, dentist, veterinarian or other person who is authorized to administer or professionally use narcotic drugs shall keep a record of such drugs received by him and a record of all such drugs administered, dispensed or professionally used by him otherwise than by prescription. The form of such record shall be prescribed by the public health council. The record of narcotic drugs received shall in each case show the date of receipt, the name and address of the person from whom received and the kind and quantity of drugs received. The record of all narcotic drugs administered, dispensed or otherwise disposed of shall show the date of administering or dispensing, the name and address of the person to whom or for whose use, or the owner and species of animal for which the drugs were administered or dispensed and the kind and quantity of drugs."

The required information for receipt of narcotic drugs should be kept separately in the form of invoices or official narcotic order forms. Information pertaining to the dispensing or administering of narcotics to patients should be kept on patient record cards or files, with adequate notation to show reason for such administration.

Public Act 389. "(21) 'Prescription' means a written or oral order for any narcotic drug or preparation from a licensed practitioner to a pharmacist for a patient. It shall contain the full name and addess of the patient or, if the patient is an animal, the name and address of the owner of the animal and the species of the animal, dated as of the day signed, the federal narcotic registry number of the practitioner, and his address and shall be signed when required in the handwriting of the prescriber. Prescriptions shall be written in ink or indelible pencil or by typewriter. Duplicate or carbon photocopies, printed, rubber stamped or pre-signed orders for narcotic drugs or preparations are not considered prescriptions within the meaning of this chapter."

Prescriptions for narcotic drugs must be executed properly according to the requirements of this section. Pre-signing or pre-dating narcotic prescriptions in anticipation of future patients' needs is not permitted, nor are printed or rubber stamped prescriptions considered proper.

Public Act 374. "Every practitioner of the healing art shall report to the commissioner of health the full name, address and date of birth of every person who, in his opinion, is an habitual user of narcotic drugs, unless such person is authorized to use narcotic drugs under the provisions of chapter 344 of the general statutes, or section 17-185 of chapter 306 of the general statutes. Practitioners making such reports shall be immune from civil or criminal liability. Such information may not be used in any criminal prosecution but shall be held confidential by the commissioner and shall be used for rehabilitation, statistical and medical purposes only."

It is suggested that when practitioners report habitual users of narcotic drugs, the full name, address, date of birth, sex, ethnic origin and type of drug used be included in the report if possible. No special forms are required. Persons using narcotics under supervision of a practitioner for bona fide medical conditions should not be reported unless they are receiving narcotics from other sources.

For additional information concerning the above narcotic laws or any other narcotic rules or regulations, please inquire of the Connecticut State Department of Health, Narcotic Control Section, 79 Elm Street, Hartford, Conn. 06115.

Sincerely yours,
Franklin M. Foote, M.D.,
Commissioner, Connecticut State
Department of Health.

To the Editor,

I find it hard to understand how you can write an excellent editorial like yours on the "D-state" in the September Journal and at the same time publish something from the 18th century like W. W. Sackett's article. As a physiologist you know what a keen pain unsatisfied hunger is for the infant and what gross instinctual deprivation does to the young. As a psychiatrist I have seen many such "good" babies later in their lives but there are enough follow-up study reports on children "raised" in this way. The Society may not have known what it was getting but the Journal did.

Your old friend,
Richard Newman, m.d.

Woodbridge, Conn.

To the Editor,

The following is my answer to the psychiatrist that wrote concerning my article. "As a physiologist the editor should recognize that all animals have a keen sense of hunger which drives them on to natural activity. I recall having seen in the Reader's Digest, Press Section in March of 1965, an article in which a ranger stated in Mount Rainer National Park, Washington, that he cautions visitors against feeding the animals. He goes on to explain that animals lose the ability to fend for themselves, become grouchy and violent if they don't get their handouts, and thus the balance of nature is upset, the point being that the same principle applies to homo sapiens. As a psychiatrist, I would hope that my critic would study a recent public admission of our 'greatest' pediatric psychiatrist of all time. He has admitted that the theory of demand and permissiveness, which he authored and popularized, are probably the cause of many of our problems with children and adults of today.

As a native and long time resident of Connecticut, I think I can well say "bravo" to the *Connecticut State Medical Journal* for having the courage to challenge the sensibilities of one of its obvious readers."

Sincerely yours,
Walter W. Sackett, Jr., m.d.

Miami, Florida.

AROUND THE STATE

Diabetes Week—November 14-20

Dr. Edward Tolstoi, New York Hospital, will inaugurate diabetes week in Connecticut and address a joint meeting of the Connecticut Diabetes Association and The New Haven Medical Association, Wednesday, November 17th at 8:15 P.M. in the Medical Association building 362 Whitney Avenue, New Haven, Connecticut.

New Haven County

Board Of Governors Meeting
New Haven County Medical Association

A largely attended meeting of the Board of Governors was held at the Colonial House in Hamden on Thursday, September 23, 1965. The members of the Board were alerted by the Councilor to the many problems which are continually presented to the Council. One of these which Dr. Henry Caplan discussed related to the plans of the Connecticut Hospital Association to form a Commission to consist of thirty members whose purpose would be Health Surveying and Hospital Planning.

The Council was asked to submit the names and a background resume of sixteen physician nominees of whom four would be selected by the Connecticut Hospital Association to serve on this Board. The selection of four doctors was entirely in the hands of the Board.

Our governing body discussed this item of Dr. Caplan's report and was followed by a resolution that he be instructed to inform the Council it felt this latest move to elevate the Hospital was at the expense of the practicing physician.

Our Radio Spot Program has been very successful and is now in its second round.

The usual social hour and dinner followed the business session.

Respectfully submitted,

H. A. Levin, M.D., *Clerk*

From The Connecticut State Department Of Health

Streptococcal infections of the respiratory system reported in Connecticut were at 314, about the same, during the week ending October 9, as they were in the previous week, said Franklin M. Foote, M.D., Commissioner, Connecticut State Department of Health. Scarlet fever cases numbered one each week, while strep throat cases were 313 compared with 314. Since no effective immunizing agent has been found for the streptococcal organism, control measures for this important disease have to be centered on other factors. A physician's help should be sought. Control measures are important because strep infections can have serious after effects, among them rheumatic fever.

Measles remained low at three, campared with two the week before. Mumps came to 59, against 34; chickenpox 26, against 33.

Infectious hepatitis cases were seven, down from 10. For the first nine months this year there have been 237 cases, which compares with the five-year average 1961-65 for the comparable months of 386 cases.

One case of malaria was reported in a resident who had been exposed to the disease in Africa.

Connecticut's million dollar shellfish industry as well as its water recreational resources will be helped considerably by the deliberations of the Governor's Task Force on Clean Water, according to Franklin M. Foote, M.D., State Commission of Health. Elimination of pollution of our streams and waterways will help avoid the threat of disease and make them safer for recreational and other purposes.

"Increased population has led to increased pollution of shore waters," said Dr. Foote. "Many areas, especially the harbors, near the larger cities have never met nor are they likely to meet the state health department's biological standards for the digging of shellfish. However, the outer harbors and the other former safe open shellfish areas are now being threatened by increasing volumes of sewage and storm water overflow.

"Some of our large rivers are polluted to the point where the state department of health recommends against bathing. With the increased water recreational activities in future years these rivers will be needed for this purpose.

"Also, it is believed by some experts that within 20 to 30 years it may be necessary to use our polluted rivers for drinking water. Should the drought of the past few years continue for one or two more years, some towns may have to turn to such sources sooner.

"What all this adds up to," according to Dr. Foote, "is the need for more thorough treatment of sewage in shore cities as well as in those towns on our rivers and streams.

"During the past 20 years, sewage treatment in Connecticut has made great strides. It is expected that by 1967 all major cities in Connecticut will have at least partial treatment of sewage. Many of these plants provide primary treatment which removes 30 to 50 per cent of the fecal material. Secondary treatment will remove 80 per cent or more of harmful pollution. In addition, chlorination facilities will control bacterial contamination.

"Working toward installation of secondary and chlorination facilities, the Governor's Task Force can go a long way toward making clean Connecticut water available in our generation," Dr. Foote said.

Vaccination against a number of strains of influenza are being offered to state employees at 16 different locations, it was announced recently by John F. Kilgus, M.D., Chief, Health Services for State Employees Section, Connecticut State Department of Health. Only influenza vaccine will be administered at these clinics. Persons subject to asthma attacks or who are sensitive to chicken, eggs or feathers should have written consent from their own physicians, Dr. Kilgus cautioned.

For employees in the Hartford area, where there is the greatest concentration of personnel, four clinics will be held at the office of Health Services for State Employees at 119 Capitol Avenue, Hartford. These will be held on October 25, 10:00-11:30 a.m. and 1:00-3:00 p.m.; October 29 from 1:00 to 3:00 p.m.; November 19 from 1:00 to 3:00 p.m.; and December 3, from 1:30 to 3:00 p.m.

State Police offices will be the clinic location at four different points: at Westbrook, Troop F on November 3, at 9:30-11:00 a.m.; Groton, Troop E, November 3, 1:00-2:00 p.m.; Danielson, Troop D, November 15, 10:00-11:30 a.m.; and in Stafford Springs, Troop C, December 1, from 1:00 to 2:00 p.m.

State Highway Department offices are clinic sites in the following six towns: Litchfield, State Highway Garage, October 27, 9:30-11:30 a.m.; in New Haven, Pond Lily Highway Garage, Pond Lily Avenue, New Haven (off Wilbur Cross Highway west of tunnel), October 28, 9:30-11:30 a.m. and 1:00-2:30 p.m.; in New Canaan, at New Canaan Highway Garage, Merritt Parkway, November 18, 10:00-11:30 a.m.; in Norwich, at the District Highway Office, Connecticut Turnpike at Intersection of Route 82 on December 1, 9:30-11:00 a.m.; and in Waterbury, the State Highway Garage, Huntington Avenue and Chase Road, Waterville on November 10, 1:30-3:00 p.m. It should be noted that the Enfield Garage location mentioned in a department circular is in error. Instead the clinic will be in East Windsor at the Windsor Highway Garage on Route 5 on November 8, from 9:00 to 10:30 a.m.

Five other state installations are to be used for flu vaccine clinics: in New Britain, Central Connecticut State College, 1615 Stanley Street, November 4, 9:30-11:00 a.m.; in Danbury, Danbury State College, 181 White Street, November 10, 9:30-11:00 a.m.; in Willimantic, Willimantic State College, at Windham and Valley Streets, November 15, 1:30-2:30 p.m.; in Bridgeport, the Bullard-Havens Technical School, 500 Palisade Avenue, November 17, 9:30-11:00 a.m.; in Middletown, at Long Lane School, Long Lane, November 29, 9:30-11:00 a.m.

Connecticut is a good state to live in in later years, healthwise, because of the combined efforts of all health personnel on behalf of the state's elderly citizens, according to Franklin M. Foote, M.D., State Commissioner of Health in a statement issued in connection with "Mature Years—New Directions Month."

Connecticut's medical care facilities—general hospital, nursing home, chronic disease hospital and homes for the aged—are carefully supervised by the state department of health so that the quality of care one receives in these institutions is of the highest caliber.

"In addition to health care programs, the state health department is interested in working with our elderly citizens in preventing and controlling disease," Dr. Foote pointed out. In later life the chronic diseases—arthritis, heart disease, glaucoma, cancer, diabetes—are potentially of great danger. By finding these diseases early enough, we can do much in controlling them. Many local communities in cooperation with voluntary health agencies and the state health department carry out programs designed to find these conditions early.

The state department of health also assists local communities in operating homemaker and home care services. These may include dental work, nutrition consultation and "meals on wheels."

Patient care is given in three hospitals operated by the state health department — Cedarcrest in Newington, Uncas-on-Thames in Norwich and Laurel Heights in Shelton. Treatment is available for persons who are disabled or who have certain chronic diseases. Anyone requiring the services offered by these hospitals may be admitted on recommendation of the family physician.

In addition to hospital care, through the coperation of public health nurses, working out of both official and voluntary agencies, much nursing care is given at home.

"The inauguration of the new hospital insurance Social Security programs in the near future will provide opportunities to improve further health services available to our senior citizens," Dr. Foote said.

Precautions Against Malpractice Claims

JACQUES HENRY GREEN, M.D.

Malpractice claims have definitely increased in recent years. This is becoming alarming. Prevention is the best defense.

Our Committee on Medical Ethics and Deportment is active, mostly, with suits, or threatened suits for Malpractice. Our By-Laws state that these should be reported to our Association. There are precautions which can and should be taken in order to avoid or minimize the chances of such claims being brought. You may know the facts which I am about to state. Nevertheless, I believe that these facts are of sufficient importance that I should emphasize them, as I have been requested to.

Two elements are usually present in a malpractice suit or claim—a poor medical result and a breakdown of the physician-patient relationship. Therefore, to avoid this, it is necessary—

That you provide your patients with care which meets the standards of good medical practice.

That you avoid unethical criticism of the work of other physicians.

That you keep good and complete medical records.

That you be careful to avoid making any statement which may be construed as a guarantee or promise of a good result. Any such statement may lead to a suit for breach of contract.

Exercise tact as well as professional ability in the treatment of your patients. If the patient is not doing well, or there is any indication of dissatisfaction, a consultation may be suggested or even demanded.

You should advise your patients of any intended absence from your practice and recommend, or make available, a qualified substitute.

The patient must not be abandoned.

The physician-patient relationship can be terminated by giving the patient ample time to find another doctor.

Your should have an adequate and ample amount of professional liability insurance.

You should always secure written consent for operation or autopsy.

You should carefully supervise assistants and employees.

You should limit yourself to such fields as are within your qualifications and should keep abreast of progress in the profession.

Except in real emergency, it is advisable that you do not examine a female patient unless a third person is present. You should keep inviolate all confidential communications. It is advisable that you use accepted medical techniques.

When things go wrong medically, patients are inclined to blame the doctor and are prone to manifest their displeasure in the form of a malpractice suit.

These precautions may help to prevent such claims.

(This was a presentation delivered by Dr. Green on the occasion of Indoctrination and Orientation of provisory members on Sept. 16, 1965.)

Doctor's Office

David N. Franklin, M.D., announces the opening of an office for the practice of pediatrics in the Merwin Building, Wilton Center, Connecticut.

Willard Gold, M.D., announces the opening of an office for the practice of psychiatry at 12 Old Boston Post Road, Saybrook.

Arnold Goldenberg, M.D., announces the removal of his office for the practice of arthritis and rheumatic diseases to 21 Woodland Street, Hartford.

W. S. Han, M.D., announces the opening of an office for the practice of obstetrics and gynecology at 80 South Main Street, Wallingford.

Franklin, F. Nejame, M.D., announces the opening of an office for the practice of obstetrics and gynecology at 173 Willow Street, Waterbury.

Ruben L. Shapiro, M.D., announces the opening of an office for the practice of internal medicine and cardiology at 85 Jefferson Street, Hartford.

James K. Spence, M.D., announces the opening of an office for the practice of internal medicine at 90 Main Street, Ridgefield.

Marin F. Sturman, M.D., announces the opening of an office for the practice of internal medicine and endocrinology at 325 Reef Road, Fairfield.

OBITUARY

Edward J. Whalen, M.D.

1886- 1965

Dr. Edward J. Whalen died at St. Francis Hospital on August 30, 1965. He was born in Northampton, Massachusetts and was a graduate of Yale University School of Medicine, class of 1908. He interned at St. Francis Hospital and took residency training in otolaryngology at Brooklyn Eye and Ear Hospital.

Dr. Whalen was a member of the American Medical Association, the American College of Surgeons and a diplomate of the American Board of Otolaryngology. During his lifetime he was elected to many positions of honor, including that of President of the Hartford Medical Society, the Hartford County Medical Association, the Connecticut State Medical Society and the New England Otolaryngological Society.

Despite his many professional activities Dr. Whalen was frequently available to spend an evening with his friends, both medical and non-medical. His knowledge and estimation of world events never failed to amaze his listeners. The medical profession in general, and otolaryngology in particular, mourn his passing, but are grateful in the realization that he has enriched our past.

Timothy L. Curran, M.D.

In Memoriam

Tower, Arthur A.—Meriden; College of Physicians and Surgeons, Columbia University, 1919. Dr. Tower was a prominent Meriden pediatrician for 43 years. More than 30 years ago, he organized the pediatrics department at the Meriden Hospital, and served as the hospital's pediatrician-in-chief until 1963. For 41 years, Dr. Tower was the attending physician at the Well-Child Clinic of the Public Health and Visiting Nurse Association. He was also a physician for the Meriden public schools and director of personnel health at the Meriden Hospital. He was a member and former president of the Hezekiah Beardsley Pediatric Club and a member of the American Medical Association, the New Haven County Medical Association, and the Connecticut State Medical Society. He was a Fellow of the American Academy of Pediatrics and a diplomate of the American Board of Pediatrics. Dr. Tower died October 17, at the age of 73.

Valenski, Thaddeus J.—Enfield; Tufts Medical School, 1937. Dr. Valenski was a prominent physician in Enfield for 26 years. He served with the Army Medical Corps overseas for four years during World War II as a captain. Dr. Valenski was a staff member of the Springfield Hospital in Springfield, Massachusetts for many years. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Valenski died September 26, at the age of 55.

Vestal, Paul W.—Woodbridge; Harvard Medical School, 1922. Dr. Vestal was a prominent surgeon in New Haven for over 35 years. He was a captain in the U.S. Army during World War II and was a Lieutenant Colonel and a senior surgeon during World War II. Dr. Vestal was on the Yale-New Haven Hospital staff for 36 years. During that time he also performed operations at St. Raphael's Hospital and was the surgeon for the New Haven Railroad and several area industries, including the Olin Mathieson Chemical Corp. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society, the American Medical Association, the American Association of Surgeons and Trauma, and a fellow of the American College of Surgeons. Dr. Vestal was at one time associated with the Leahy Clinic in Boston. Dr. Vestal died September 24, at the age of 72.

WOMAN'S AUXILIARY

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1965 Fall Conference Problem—Oriented

What are the basic areas of concern in our cities, counties and states? How can the Auxiliary create awareness of these problems and motivation towards solving them? These two questions, posed by Auxiliary President, Mrs. Richard A. Sutter, set the theme for the 1965 Fall Conference of the Woman's Auxiliary to the AMA, October 10-13 in Chicago.

Opening the formal sessions, Dr. F. J. L. Blasingame, AMA Executive Vice President discussed the problem of greater concern to the medical profession, the Medicare law. Pointing out that this is "a Dunkirk but not a Waterloo," Dr. Blasingame stated that the profession's goal must be to prevent Medicare from being extended to cover larger segments of the population. The strategy must be to inform ourselves and the public about the dangers and onerous aspects of this program and to identify the issues clearly. He urged Auxiliary members to witness sustained concern and activity in political action as part of this strategy.

Rounding off the session was a panel discussion on aging and long-term care. Dr. Frederick Swartz, chairman of AMA's Committee on Aging, pointed out that the accepted signs of aging actually stem from lack of conditioning in the early years, and are affected by irritating effects of environment over a long period of time. The reactor panel, Mrs. John Chenault and Mrs. G. Prentiss Lee, said that Auxiliaries can educate the public on the need for self-discipline through the community service programs.

The second panelist, Dr. Eugene H. Guthrie, chief of the U.S. Public Health Service Division of Chronic Disease emphasized the need for early detection and care to prevent chronic diseases such as cancer, rheumatic heart disease and diabetes. He suggested increased use of automated test procedures and computer analysis, but the reactors, Mrs. John Farley and Mrs. Lyle Murphy, objected to "computer" medicine on the grounds that the basic doctor-patient relationship would be destroyed.

"The nursing home of the future must provide effective *medical* care, for the majority of the patients will have a chronic disease," Dr. Charles C. Edwards, director, AMA Division of Socio-economic Activities said. "The nursing home's medical staff, individual physicians in the community and the county medical society each will play a great part in seeing that this needed care is provided," he added. Mrs. Hamilton Ford and Mrs. Virgil Ray Forester, the reactors, suggested that Auxiliaries might work to see that state laws regarding licensing of nursing homes are enacted, and that individual members might do volunteer service in the homes.

At the Monday luncheon, Dr. James Z. Appel, AMA president, reviewed the events of his first 105 days in office, which included the signing of the Medicare bill and introduction of the bill on heart, cancer and stroke. "Regardless of how much say physicians have in writing the rules and regulations, the Medicare law will cause a deterioration of medical care," he said. Adding that he believed that Medicare's sponsors intend to extend coverage to everyone, Dr. Appel said if the AMA backed a position of non-participation on the present program, people would lose faith in physicians." This would seriously damage our strategy in trying to prevent the extension."

The director of Rutgers' Urban Studies Center, John Bebout, was the first afternoon speaker. "Approximately 60 per cent of the U.S. population lives in giant urban areas, and we have been too slow to react to this concentration and to adjust our community resources to this influx," he said. He pointed out that this has created three groups of social problems: (1) environmental; (2) ghettorization of color and poverty, and (3) those of suburban affluence and alienation. The reactors, Mrs. R. C. L. Robertson and Mrs. William Stone, urged Auxiliaries to be aware of these problems and to pass on this awareness to those who can help solve them. Adding that poor education can effect the future candidates for medical and nursing schools, they emphasized the need to work with local school boards to improve the educational level.

Dr. James Telfer, chairman, AMA Department of Environmental Health, discussed health problems in rural areas. "Rural life is much more complicated, and the increased use of chemical compounds and pesticides is changing the surroundings and creating new health problems. There is a wider range of concern about environmental health problems today," he said. The reactors, Mrs. Jordan Kelling and Mrs. Norman Gardner, portrayed the Auxiliary's role as that of an information center, especially in the areas of pollution, pesticides control and immunization.

Continuing the discussion of local problems, the Tuesday session featured three speakers who presented aspects of Auxiliary cooperation with community agencies.

Dr. Fred Hein, chairman, AMA Department of Community Health and Health Education, emphasized that the most important aspect of a school health program is health education. He pointed out that the health misconceptions school pupils have are usually retained over the years. To provide the proper information, he suggested that Auxiliary members contact local school officials, informing them of the availability of AMA's *Health Education Service for Schools and Colleges,* a monthly bulletin of authentic health information. Mrs. C. Rodney Stoltz and Mrs. Howard Ellis, the reactors said that the need in this area is obvious, and that Auxiliaries should seek the assistance of the local medical society in confronting school boards with this problem.

In discussing the serious personnel shortage in hospitals, George Bugbee, University of Chicago, stated that necessity has created reassignment of duties in patient care, generating a need for additional types of personnel. The reassignment, in turn, creates conflicts both in proper training and in functions, and educational sources must be enlisted to prepare these ancillary people to give care within their capabilities. As reactors, Mrs. Chester Young and Mrs. Herbert Ulrich acknowledged the Auxiliary's obligation to interest young people in health careers, suggesting that the now-existant program be carried to the junior high level.

"Program emphasis at the local level is the ideal place for the Auxiliary to work in the field of mental health," Mrs. Winthrop Rockefeller, National Association for Mental Health president, said. The areas of greatest concern, she pointed out, are: (1) facilities for active care; (2) centers for treating emotionally disturbed children, and (3) rehabilitation and after-care. The reactors, Mrs. Paul Rauschenbach and Mrs. John Boe, emphasized that providing much of this care depends on those elected to serve in government. Auxiliary members should take an interest in the candidates' feelings on budget allocations for these services.

At the Tuesday luncheon, Mr. Bernard Abel, AMA Department of International Health, described "Project Viet-Nam." AMA's efforts to recruit civilian physicians to serve the people of Viet-Nam. These physicians will serve on a short-term basis.

The afternoon session was devoted primarily to illustrating how the information received at the conference could be used on the local level. Mrs. John Dickie, national program chairman, urged Auxiliaries to plan carefully, keeping the Auxiliary's purpose, as well as the needs of the community in mind. She urged local auxiliaries to establish Speakers Bureaus, so that medicine's message might be carried to other groups.

Mrs. Lewis Fritts, New Jersey president, and Mrs. Ralph Bohnsack, Missouri president, described two successful "Guest Day" health education programs presented in their states. In both cases, planning began a year in advance, and representatives of all civic, organizational and church groups in the area were invited. Appropriate literature was distributed, and the Auxiliary later aided the invited groups in setting up similar programs for their own meetings.

Program suggestions from the AMA were also presented. Mr. Robert Etheridge described two programs which would explain why county medical societies are creating a climate in which the physician and the clergy might communicate on total patient care. One, suitable for wives of doctors and clergymen, is built around a film, "The One who Heals." The other, appropriate for a "Guest Day" program, shows the importance of the M.D.-clergy relationship by using case histories of illnesses familiar to women, followed by a panel discussion.

Mr. William Strand, AMA Communications Division, then discussed the proposed AMA institutional advertising campaign, pointing out that it would be built around the association's affirmative and progressive activities important to the public in terms of family health.

The session, over which Mrs. Asher Yaguda, Auxiliary president-elect presided, ended with a round-up report on AMA activities by Dr. Ernest Howard, assistant executive vice president.

Other conference activities included regional dinners; session on parliamentary procedure; consultation on matters relating to finance and publications, and a tour of AMA's Institute for Biomedical Research.

Monday evening, conference participants attended the AMPAC dinner, at which Rep. Glenn R. Davis, Republican, Ninth Congressional District, Wisconsin, was guest speaker.

BOOKS RECEIVED

Books received for review are acknowledged in this department and such acknowledgement must be regarded as a sufficient return for the courtesy of the sender. Selection will be made for review in the interests of our readers and as space permits.

Diuretic Therapy. An appraisal of diuretic drugs. Edited by Arthur C. DeGraff, M.D. and Alan F. Lyon, M.D. with four contributors. The C. V. Mosby Company, St. Louis, Missouri, 1965. 41 pp. $3.50.

Hysteria. The History of a Disease by Ilaza Veith. The University of Chicago Press, Chicago, Illinois, 1965. 301 pp. Illustrated. $7.95.

Pediatric Electrocardiography. Normal and Abnormal Patterns, Incorporating the Vector Approach. By Warren G. Guntheroth, M.D. The W. B. Saunders Co., Philadelphia and London, 1965. 150 pp., Illustrated. $7.00.

Neurological Surgery of Trauma. Col. John Boyd Coates, Jr., M.C., Editor in Chief; Aronld M. Meirowsky, M.D., Editor. Office of the Surgeon General, Dept. of the Army, Washington, D.C. 604 pp. with 273 illustrations and 35 tables. $6.25.

Diseases Of The Newborn. By Alexander J. Schaffer, M.D. Second Edition. W. B. Saunders Co., Philadelphia and London, 1965. 1023 pp. Illustrated. $22.00.

Management of the Patient with Cancer. Edited by Thomas F. Nealon, Jr., M.D. with contributions by seventy-one authorities. W. B. Saunders Co., Philadelphia and London, 1965. 1067 pp. Illustrated. $27.50.

Principles Of Chest Roentgenology. A Programmed Text. Benjamin Felson, M.D., Aaron S. Weinstein, M.D. and Harold B. Spitz, M.D. W. B. Saunders Co., Philadelphia and London, 1965. 221 pp. Illustrated. $6.00.

(CSMS)—NEW MEMBERS

Fairfield County

James M. Alexander, Bridgeport
Octavio Bessa, Jr., Stamford
Henry E. Branham, Jr., Stamford
Wayne T. Branon, Jr., Greenwich
Jacob T. Chachkes, New Canaan
Joseph M. Corey., Norwalk
Robert G. Dolan, Huntington
Philip Fleisher, Bridgeport
Peter A. Goodhue, Stamford
Richard M. Herman, Bridgeport
James W. Innes, Greenwich
Lewis M. Karas, Stamford
William Kessler, Westport
Joseph F. Krivda, Ridgefield
Peter La Forte, Stamford
Murat A. Merdinolu, Norwalk
Moosa M. Moadel, Stamford
Charles P. Neumann, New Canaan
Albert G. Roberts, Darien
David H. Steinberg, Stamford
Gerald O. Strauch, Stamford
Martin F. Sturman, Fairfield
Michael G. Tager, Norwalk
Albert Weinstein, Bridgeport

Hartford County

Celedonio M. Asuncion, Hartford
Walter A. Borden, Hartford
Hubert S. Bush, Jr., Hartford
Albert Casale, Hartford
Robert J. Colliton, Hartford
William F. Cushman, East Hartford
Anthony J. Dougherty, Hartford
Leon P. DuPlessis, Hartford
Robert E. Edkin, Hartford
Anthony L. Fons, III, Hartford
Walter R. Hampton, Simsbury
Walter G. Heimann, Manchester
John T. Hornblow, Hartford
Trudeau M. Horrax, New Britain
Allen F. Jackson, Hartford
William Knights, East Hartford
David J. Letourneau, Manchester
Benjamin Levy, Hartford
Robert S. Martin, Hartford
George M. McDermott, Bristol
Ali A. Rafiee, New Britain
Georgino R. Reyes, Thompsonville
Robert P. Rossbaum, Hartford
Martin L. Rubin, Manchester
Paul K. Schick, Manchester
Otis B. Schreuder, Marlborough
Harbans Singh, Hartford
Jay R. V. Smith, Hartford
Phillip E. Trowbridge, Hartford
Allen O. Warner, Hartford

Special Notices

YALE UNIVERSITY SCHOOL OF MEDICINE

Special Postgraduate Conference in Obstetrics & Gynecology

Wednesday, December 1, 1965

This postgraduate program is designed to provide the practicing physician with information on important clinical problems in the field of obstetrics and gynecology. It should be of special interest to physicians in family practice as well as to those in obstetrics and gynecology.

The care of the patient including new diagnostic techniques and practical aspects of management will be emphasized. Each lecture will be followed by a question-answer period.

9:30 A.M. Coffee service for registrants

10:00 A.M. Welcome and Opening Remarks
Dr. C. Lee Buxton

MORNING SESSION
10:15 A.M. to 1:00 P.M.

DIAGNOSIS OF INTRAUTERINE FETAL JEOPARDY AND METHODS TO IMPROVE SURVIVAL
Dr. Clarence D. Davis (Chairman)
Antepartum and Intrapartum Fetal Electrocardiogram
Dr. Edward H. G. Hon
Urinary Estrogen in the Diagnosis of Placental Insufficiency
Dr. Nathan G. Kase
Diagnosis and Therapy of Erythroblastosis
Dr. Maclyn E. Wade
Estimation of Fetal Size
Dr. Ernest I. Kohorn
Induction of Labor—Indications and Methods
Dr. Clarence D. Davis

AFTERNOON SESSION
2:00 to 4:30 P.M.

CURRENT TOPICS IN GYNECOLOGY
Dr. John McL. Morris (chairman)
Chemotherapy—Application to Gynecologic Cancer
Dr. Maclyn E. Wade
Septic Shock—Review of Experience
Dr. Leon Speroff
Contraception with Hormones
Dr. Nathan G. Kase
Mechanical Contraception with Intrauterine Devices
Dr. Burton H. Cohen

Time: 9:30 A.M. to 4:30 P.M., Wednesday, December 1, 1965.

Place: Mary S. Harkness Memorial Auditorium, Yale University School of Medicine, 333 Cedar Street, New Haven, Connecticut.

Registration Fee and Tuition: $25.00. Admission will be limited to physicians who have registered in advance. Interns and residents may register without charge.

Inquiries should be sent to: Office of Postgraduate Education, Yale University School of Medicine, 333 Cedar Street, New Haven, Connecticut 06510.

YALE UNIVERSITY SCHOOL OF MEDICINE

will present a third postgraduate course on
PATHOLOGY OF THE LUNG

March 14-19, 1966

under the direction of Dr. Averill A. Liebow

This intensive postgraduate course has been planned for pathologists and other physicians who have a special interest in pathology of pulmonary disease. Some experience in interpretation of microscopic tissue sections is a prerequisite.

The six-day course will stress newer knowledge of pulmonary disease including recently discovered and less commonly encountered entities. It will consist largely of over-the-microscope instruction using material from the teaching and consultation files of the Department of Pathology. Instruction will also be given in injection and macrosection techniques.

Faculty for this course will include Professor Herbert Spencer of St. Thomas' Hospital Medical School, London, and Dr. Averill A. Liebow, Milton R. Hales, and Charles R. Carrington.

Sessions will be held daily from 8:00 A.M. to 5:00 P.M. Monday, March 14, through Saturday, March 19, 1966, in the Department of Pathology at Yale University School of Medicine, New Haven, Connecticut. The tuition fee is $175.00.

Because of the nature of the instruction, the number of participants must be limited to 20. Inquiries regarding enrollment should be sent to the Office of Postgraduate Medical Education, Yale University School of Medicine, 333 Cedar Street, New Haven, Connecticut 06510 *prior to February 1, 1966*. Please do not send checks or money for tuition. Applicants will be notified by February 15 regarding acceptance and will be asked to forward a deposit at that time.

AMERICAN COLLEGE OF PHYSICIANS

Presents
Postgraduate Course No. 7

PATHOPHYSIOLOGICAL BASIS OF THERAPEUTICS

November 15-19, 1965

UNIVERSITY OF KENTUCKY MEDICAL CENTER
Lexington, Ky.
Director: E. D. Pellegrino, M.D., F.A.C.P.
Associate Director: N. J. Pisacano, M.D.

Fees: A.C.P. Members, $60; Nonmembers, $100. Minimal Registration, 50; Maximal Registration, 200.

NOTE: Registration forms and requests for information are to be directed to: Edward C. Rosenow, Jr., M.D., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pa., 19104.

SUMMARY OF COURSE

The unifying theme will be a discussion of the disturbances in physiology underlying the clinical manifestations of disease in several organ systems together with the way in which these disturbances are modified by therapeutic measures. The discussion of each subject listed in the following course outline will begin with a review of pathophysiology and conclude with the modification of abnormalities by various therapeutic agents. The emphasis is to be on fundamental mechanisms rather than on details of therapeutics.

HOTEL ACCOMMODATIONS

The Phoenix Hotel, 120 East Main Street, Lexington, Ky., Mr. Warren P. Schleicher, Sales Manager. Single rooms, $7.00, $8.00, $10.00; twin—bedded rooms, $13.00, $14.00 and $15.00.

When writing for reservations, please identify yourself with the College, and with this particular course.

VISITING PROFESSOR PROGRAM IN SURGERY

Saint Francis Hospital, Hartford, Connecticut

Visiting Professor: John M. Howard, M.D., Professor of Surgery, Hahnemann Medical School, Philadelphia, Pennsylvania.

Thursday, November 11, 1965—9:00 A.M.

"TREATMENT OF CHRONIC PANCREATITIS"
"TUMORS AND CYSTS OF THE PANCREAS"
10:30 A.M.

Saturday, November 13, 1965—9:00 A.M.

"CLINICAL STUDIES OF THE LYMPHATICS"

All lectures will be held in the St. Francis Hospital Amphitheater.

THE AMERICAN COLLEGE OF PHYSICIANS

POSTGRADUATE COURSE No. 9
INTERNAL MEDICINE

Medicine of Tomorrow: Recent Adavnces In Internal Medicine

January 10-14, 1966

UNIVERSITY OF ALABAMA MEDICAL CENTER
Birmingham, Alabama
Meeting Place:
ENGINEERING BUILDING AUDITORIUM
THE MEDICAL CENTER
1919 - 8th Avenue, South, Birmingham, Alabama

Director: Howard L. Holley, M.D. F.A.C.P.

Minimal Registration: 50; Maximal Registration, 150.

Fees: A.C.P. Members, $60; Nonmembers, $100.

Note: Registration Forms and requests for information are to be directed to: Edward C. Rosenow, Jr., M.D., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pa., 19104.

THE DEPARTMENT OF POSTGRADUATE MEDICINE

of
ALBANY MEDICAL COLLEGE
announces
Reservations Now Being Accepted for the Seventh
MEDICAL SEMINAR CRUISE

January 28-February 7, 1966

A 10-day cruise from New York aboard America's newest and most modern cruise ship "S.S. Brasil." Ports of call include Barbados, St. Thomas and San Juan.

Faculty of Albany Medical College will present a comprehensive shipboard postgraduate program, covering subjects in internal medicine, pediatrics, hematology, pathology and surgery.

Constitutes 20 hours of AAGP credit.

For information, write to:

Department of Postgraduate Medicine, Albany Medical College, Albany, New York 12208.

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WANTED: FULL TIME position, preferably some surgical expereince, for north east casualty insurance company. Salary open. Write to: H. H., c/o Connecticut State Medical Journal, 160 St. Ronan Street, New Haven, Conn., 06511.

FAIRFIELD COUNTY, CONNECTICUT — Metropolitan Area—has community need for a Pediatrician. New department in expanding general hospital requires an energetic Pediatrician to organize while he establishes a private practice. Reply to: P.O. Box 638, Bridgeport, Connecticut, 06601.

CORNER OF TRUMBULL AND WHITNEY AVENUE. 1st floor, attractive, pleasant surroundings. 4 room doctor's office with heat, hot water, maintenance, parking. Occupied by prominent surgeon established for 35 years. Some equipment. Ideal opportunity for young doctor or any profession. Reasonable. 624-9480.

PRACTICE OF G.P., with fully equipped, six-room office, and lab, located in Naugatuck, Connecticut, available immediately. Over $60,000 gross annual income. Interested parties contact Leonard F. Casella, Naugatuck, Tel. 729-8289 *at once*.

NEW BOOKS IN REVIEW

PULMONARY PHYSIOLOGY IN CLINICAL PRACTICE, by William R. Pace, Jr., M.D., F.A. Davis Company, Philadelphia, Pa., 143 pp., illustrated. $2.95.

Reviewed by: FRANK D. GRAY, JR.

This remarkable little book with a commendably low price is a model of medical communication. The student, house officer, or practicing physician will be gratified by its small demand on his time. Ten chapters cover basic physiologic principles, methods of testing with emphasis on office techniques, clinical aspects including natural history and treatment, and finally, a resumé of the terminology, formulae, and tables useful in the field of clinical pulmonary physiology.

There is an excellent balance and careful discrimination between well founded, generally accepted concepts and speculation. Inevitably one finds some areas for disagreement. On the one hand I believe that the author is too dogmatic in defining emphysema, on page 15, as the "late stage of obstructive bronchopulmonary disease characterized by pathological anatomical changes" while we can actually state, at best, only that obstructive disease and emphysema are associated because the evidence that one is caused by the other is inconclusive. On the other hand he quibbles about using the word permeance which he favors over diffusion capacity (page 34). I agree that permeance is a better term, but do not believe that it should be injected into an elementary text when the expression "diffusion capacity" has gained wide-spread acceptance and any other term can only lead the novice into confusion. The place for semantic arguments of this sort is the organized physiological meeting at which experts from all over can carry on discussion and hopefully come to agreement.

In another context the additional 1.9 volumes per cent dissolved oxygen in arterial blood while breathing pure oxygen is disparaged (page 63), yet, while a small fraction of the total arterial blood oxygen content, it is almost half of the normal arterial-venous oxygen difference, and, at the high tension prevailing, could result in delivery of a normal amount of oxygen at a greatly reduced cardiac output. I am more concerned about the statement that drowsiness and confusion usually do not occur until the arterial blood carbon dioxide tension is over 90 mm. Hg., and that when it is over 130 mm. Hg and the pH under 7.18 coma is to be expected (page 80). Recent publications indicate quite clearly that, while breathing room air, carbon dioxide tensions of over 90 mm. Hg are not compatible with life. Coma probably occurs before this. Higher carbon dioxide tensions may be obtained while breathing oxygen, but reported levels of over 100 mm. Hg in a living patient breathing oxygen, but reported levels of over 100 mm.Hg in a living patient breathing room air probably represent technical errors in measurement. The author's statement could be dangerous by leading to complacence in the face of dangerously high carbon dioxide tensions. At the same time the statement on page 90 that there is no fear of over-ventilating apneic patients with presently available IPPB apparatus needs qualification. Calamitous results may follow if an apneic patient is over-ventilated through a tracheostomy opening by means of an IPPB apparatus because of a very rapid drop in carbon dioxide tension. We have established as a rule of thumb that the carbon dioxide tension should not be reduced more than half way to normal in the first 24-hours of treatment. Otherwise acute cerebral ischemia and frequently irreversible brain damage, coma, or death may ensue.

The chapters describing basic physiological principles should be a very useful introduction to busy practitioners who finished their medical training before the day of the cardiopulmonary laboratory. Medical students ought to have considerably deeper knowledge of pulmonary physiology than this book provides, but the tables, equations, and terminology sections are handy references and the sections on clinical matters present an excellent survey which should help students understand what is happening to patients during their clerkships. Similarly house officers should find the clinical sections helpful. The author has the knack of clear, succinct writing and has accomplished an almost impossible task—writing a brief but useful introduction to the entire field of clinical pulmonary physiology. At its price it must be one of the greatest bargains the student or practitioner will encounter in his professional life.

THE PEDIATRIC PATIENT 1965. By Sarah R. Gustafson, Ph.D., and David Baird Coursin, M.D., J. B. Lippincott Company, Philadelphia, Pennsylvania, 1965. 216 pp., 81 figures. $6.00.

Reviewed by: LOUIS H. NAHUM

This book is an excellent reference guide for the family physician as well as the pediatrician. It contains virtually all the advances in medicine in 1964 since pediatric medicine is based upon the same growth of medical science as is the whole field of medicine.

This year one basic area of medical science, that of immunology and its relevance to auto-immune and allergic phenomena, is covered. It deals with theories and less with clinical application and in this respect it is more suitable for the student than the practitioner. Not discussed is the pathology of hypersensitivity, its common denominator of intravascular clotting and the possibility this opens up for therapy with future fibrinolytic drugs.

There are excellent sections on eye examinations in early life and correction of visual defects. There is a didactic discussion of the problems of adolescents: A fine chapter on growth. At the end of the book is an appendix on various techniques, a comparison of asthma in infancy as contrasted with that in older children. Experimental production of kernicterus, selected anabolic steroids and their use in pediatrics, tests for detection of disorders of amino acid metabolism and syndromes associated with them.

The book is excellently supplied with a bibliography after each chapter, is packed with valuable diagnostic and therapeutic information and should grace every pediatrician's desk.

Connecticut Medicine

Connecticut State Medical Journal

Volume 29 / December 1965 / Number 12

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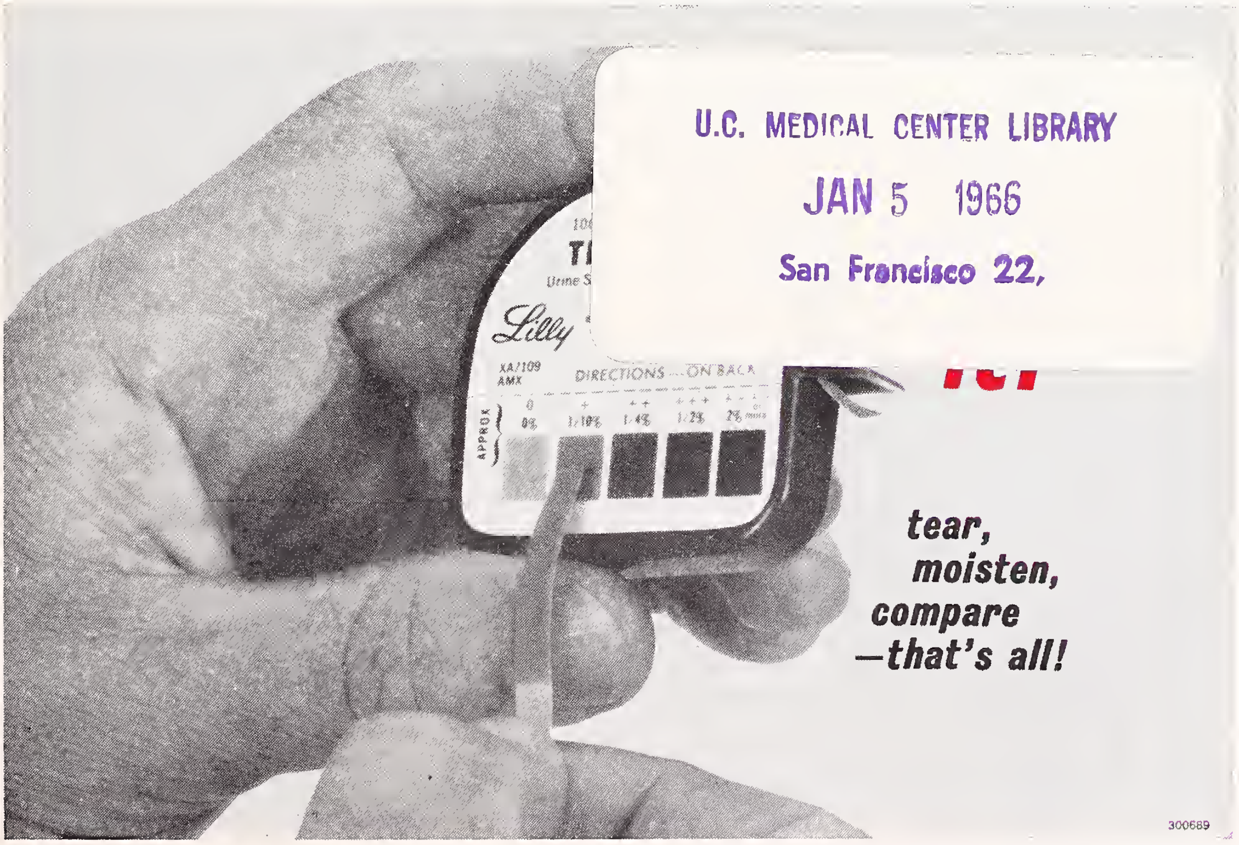
RUSH: PHYSICIAN, PEDANT, PATRIOT (see page 831)



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Connecticut Medicine

DECEMBER 1965
Vol. 29 / No. 12

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Connecticut Medicine

editorials

Hypertension And Headache

There is a medical dogma that if a patient suffers from headache and also has hypertension, then the headache is caused by the hypertension. Many efforts have been made to define the "hypertensive" headache with little success. Stewart[1] studied this problem statistically and finally concluded that headache experienced by hypertensive patients is not at all related to the arterial pressure level, but is in fact an anxiety symptom. In his report on 200 patients with hypertension only one-fourth experienced headache as a symptom. This was as true of men as of women in the menopause. Certainly in his series headache is by no means a usual symptom in hypertension since of 104 patients who did not know they had hypertension 87 denied headache. Furthermore, of those patients who complained of headache many recovered spontaneously and treatment of the hypertension rarely influenced the headache. The patients who did respond did so to almost any treatment and the degree of relief from headache seemed to vary with the impressiveness of the treatment.

In the descriptions of the so called hypertensive headache no uniform specific symptom complex has been elaborated. Although Pickering[2] thinks that there is a typical hypertensive headache which is present in the occipital area occurring in the early morning and easing as the day goes on. But significantly the headache is probably unrelated to intracranial pressure because occluding the external carotid artery did not relieve the headache although such a maneuver should reduce the blood through the brain. Furthermore, the cerebrospinal fluid pressure is not higher when the headache is present than when the patient is headache free. Moser[3] also found that the early morning was the most frequent time for the occurrence of headache in his series of fifty-four patients and occasionally the headache awakened the patient from sleep. However, forty-three of his fifty-four patients definitely experienced headache from one to twenty-five years before the onset of hypertension. Moser also mentions that the headaches in the majority of patients could not be accurately defined with regard to location and contributory factors, nor could he separate true "hypertensive headache" from those precipitated by emotional upsets. He concluded that the clinical picture of headaches in patients with elevated arterial pressure does not fit into any one of the recognized headache classifications in the majority of patients.

With the advent of antihypertensive drugs, the opportunity to study the response of the so called "hypertensive headache" to blood pressure lowering has become feasible. It is therefore interesting that only 25 per cent of patients treated with various antihypertensive drugs[3] noted definite relief from headache with blood pressure lowering. A much higher percentage experienced either blood pressure lowering or headache relief! How relief of "hypertensive headache" can come when the blood pressure is not lowered by drugs, is quite mysterious. The same observation has been noted in sympathectomized patients who were relieved of headache though not of their hypertension.[4,5] Such observations cast serious doubt upon the belief that in hypertension the arterial pressure in the brain rises and causes pressure against cerebral or meningeal tissue. It is probable, however, that in the few patients with malignant hypertension, blood pressure lowering does afford relief of headache, but such patients also suffer from retinopathy and some

THE COVER

RUSH: PHYSICIAN, PEDANT, PATRIOT

PROFESSIONAL, moral, and physical courage of Dr. Benjamin Rush (1745-1813) was taxed to exhaustion during the 1793 yellow fever epidemic in Philadelphia, capital of the new United States of America. Those residents who could, fled; those who could not were decimated by disease. Horror and hysteria reigned. Hundreds died daily. Dr. Rush stayed, cared for patients, personally survived two attacks of fever. Though his heroic treatments were severely criticized, Rush was unswerving. Patriot, signer of the Declaration of Independence, leader in the country's first medical school, Rush became the new nation's first great physician.

degree of cerebral edema, which when relieved could explain a disappearance of headache. One must not forget, however, that such severe hypertensives also receive large doses of sedative drugs like reserpine, which could lessen the feeling of pain directly.

If there really is a clinical entity, the hypertensive headache, what could possibly be its mechanism? Wolff[6] thought that distension of the external carotid artery might be the cause, since amplitude of pulsations of intracranial vessels does not increase during a headache nor decrease during subsidence of the headache. Furthermore, it is now established that cerebral vessels "feel" the pressure in the arteries, and constrict as the pressure goes up and dilate as the pressure goes down thereby guarding the brain against systemic pressure changes and at the same time assuring a constant flow of blood through the brain. If cerebral arterial pressure is not synonymous with systemic arterial pressure then there may not be elevated pressure in the brain during hypertension and the concept of hypertensive headache needs reexamination and much further experimental evidence in support of it. For the present, the concept of hypertensive headache must remain with the medical dogmas.

L.H.N.

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Magnesium In Clinical Medicine

Interest in electrolyte metabolism has grown since it was shown in our laboratory that potassium, rapidly infused, causes ventricular fibrillation, but if slowly infused leads to cardiac arrest. Now of course electrolyte determinations in clinical medicine are commonplace and help greatly in management of various conditions particularly congestive heart failure and renal insufficiency.

During the last few years there has been an increased interest in magnesium metabolism as evidenced by the large numbers of papers in the literature dealing with this cation in various clinical states. Aberrations in magnesium metabolism have been reported to occur in a variety of diseases, particularly in diseases associated with the thyroid, in alcoholism, in cirrhosis of the liver, in pregnancy, in newborn infants, and in certain patients with renal and cardiac disease. There has also been an expansion of experimental studies in rats, guinea pigs and to a lesser extent in other species on various aspects of dietary magnesium deficiencies.[1]

The normal human body contains about 20 grams of magnesium of which 98 per cent is found inside cells and the skeleton. The daily requirements of magnesium in adults is 0.35-0.45 grams daily. The normal serum levels vary from 1.91 m Eq/1 to 2.27 m Eq/1 depending upon the methods of determination. Magnesium is important because next to potassium it is the major intracellular electrolyte. It manifests many important functions in the body generally, although its relationships with other electrolyte and enzyme systems have yet to be elucidated. Magnesium is a metal activator in carbohydrate and protein metabolism and is intimately related to neuromuscular conduction in the heart and skeletal muscle. Magnesium appears to be essential for oxidative phosphorylation. In its absence, mitochondria isolated from magnesium deficient rats cannot carry out this reaction. Apparently the ability to carry out oxidative phosphorylation is necessary for maintaining sodium and potassium concentration gradients. In the kidney tubular cells it is a part of the adenosine-magnesium-adenosine triphosphatase complex which is involved in sodium and potassium transport across the tubular cells.

The primary cardiovascular effects of magnesium include its influence on myocardial contractility, blood pressure, myocardial conduction and cardiac rhythm, all of which require the correct amount of magnesium in extracellular and intracellular compartments. The decline in blood pressure seen after its intravenous administration is probably due to (1) its blocking of sympathetic ganglia, and (2) its direct dilator action on peripheral vessels especially veins, and (3) a direct effect upon the vasomotor center. Magnesium depresses the conduction and spontaneous rhythm of the heart, apparently in a most complex manner but one of its actions is to increase the passage of potassium out of the cell during depolarization by reducing the membrane permeability to this ion.

Brooks et al. noted that wide variations in magnesium ion concentration have little effect on excitability or electrical activity of the isolated heart except that marked changes can occur when the concentration of calcium is low. Hypermagnesemia is usually due to renal retention, injection of magnesium or dehydration. When serum levels reach 6 m Eq/1 progressive depression of cardiac con-

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duction and neuromuscular activity occurs. Such levels are seen in oxalic acid poisoning and excess oral epsom salts in children with congenital megacolon, severe renal disease, hyperthyroidism, untreated diabetic coma with dehydration, excess intake of magnesium salts with impaired renal function. Experimentally oral magnesium salts could not induce hypermagnesemia because of low intestinal absorption and rapid renal excretion. When magnesium is given intravenously to man there is an initial bradycardia, prolonged auriculoventricular conduction, delayed intraventricular conduction and some T wave changes in the electrocardiogram. Large amounts cause hypotension. However, the electrocardiographic changes accompanying magnesium imbalance are far from being specific and undoubtedly depend on variations in intra and extra-cellular concentration of other ions.[2]

Fitzgerald and Fourman[3] have succeeded in producing hypomagnesemia in man by administering a low magnesium diet and ion exchange resins. They noted no change in the serum magnesium concentration and no change in the blood pressure, pulse rate, or electrocardiograms. Nevertheless there are several clinical conditions in which low serum mg++ is found. These include prolonged intravenous therapy without mg++, malignancy, during recovery from diabetic acidosis, hyperthyroidism and eclampsia, during the polyuric phase of recovery from renal failure, and during periods of diuresis secondary to ammonium cloride and mercurial therapy in patients with congestive heart failure. Flink[4] believes that low mg++ levels are associated with muscle twitchings and convulsions in patients with severe renal disease, eclampsia and during recovery from hypopotassemic alkalosis. We must remember that low magnesium levels frequently are encountered in chronic alcoholics. Flink found 9 out of 12 patients with significant depression of serum mg++ concentrations who suddenly developed psychiatric and neuromuscular symptoms and tremors. Administration of magnesium by parenteral route or by diet affected clinical improvement which on occasion was dramatic. Although their calcium blood levels was also low, calcium administration alone was not sufficient to correct the neuromuscular disorders.

It has been known for some time that low magnesium levels caused formation of calcified placques in the endocardium and wall of the aorta in calves. They also showed a generalized calcification of the soft tissues and nephritis.[5] Vitale et al.[1] have repeated these experiments in the growing Cebus Monkey. These animals suffered weight loss, hyperirritability and at times convulsions. They also developed decreased serum potassium levels, and profound electrocardiographic changes which, however, were usually associated with hyperkalemia. The animals showed markedly diminished tolerance to cardiac glycosides. The serum cholesterol concentrations increased significantly and there were marked vascular degeneration in the aorta consisting of lipoid deposits and dense fibrous connective tissue placques.

Because high dietary magnesium has been thought to diminish the amount of cardiovascular lipoidosis, while low serum magnesium promotes aortic degeneration in calves and monkeys, Parsons[6] tried giving magnesium to 100 patients suffering from coronary heart disease of which at least one-third were acute myocardial infarctions. There was only one death, while 196 cases of acute myocardial infarction treated with routine anticoagulants gave a mortality of almost 30 per cent. Malkiel, Shapiro et al.[7] have reported similar findings.

Admittedly this is but an uncertain hypothesis but the administration of small amounts of magnesium sulphate intramuscularly is not frought with any danger and it is interesting to look forward to more studies of this type to see whether magnesium can be of value to acute and chronic coronary artery disease.

If we remember the clinical conditions in which hypomagnesemia occurs, we should be able to prevent neuromuscular and cardiac disorders in these patients by administering magnesium. In doing so we will also improve their tolerance to cardiac glycosides, a matter of great significance in those suffering also from congestive heart failure.

L.H.N.

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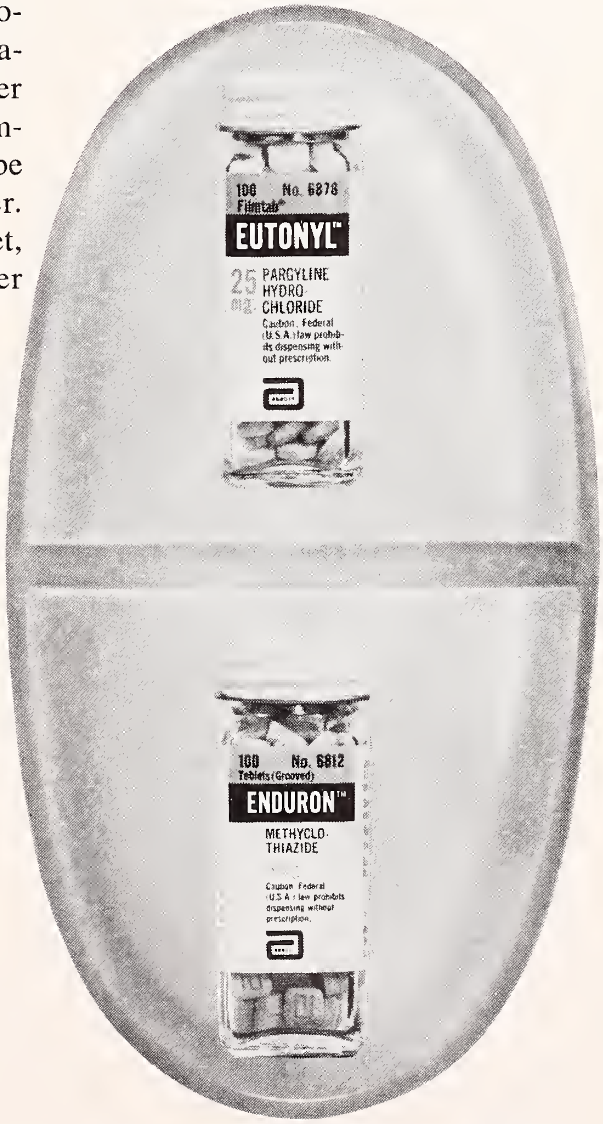
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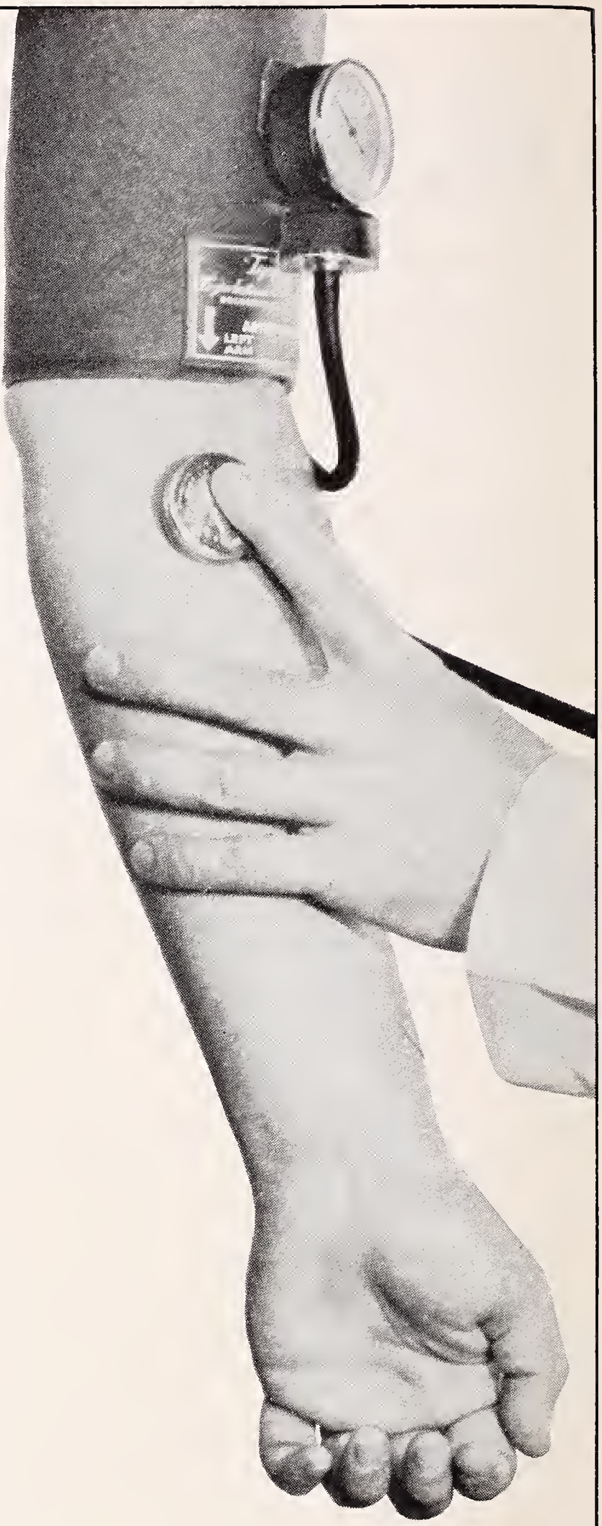

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WARNINGS: Pargyline hydrochloride is a monoamine oxidase inhibitor. Patients should be warned against eating cheese, and using alcohol, proprietary drugs or other medication without the knowledge of the physician. When it is necessary to administer alcohol, narcotics (notably meperidine), antihistamines, anesthetics, barbiturates and other hypnotics, sedatives, tranquilizers, or caffeine, these agents can be used cautiously at a dosage of ¼ to ⅕ the usual amount. Avoid parenteral administration where possible. Withdraw pargyline two weeks before elective surgery.

Patients should be warned about the possibility of postural orthostatic hypotension. Those with angina or other evidence of coronary disease should not increase physical activity. Pargyline may lower blood sugar. Potassium depletion is unlikely at the recommended dosage, but if it occurs, adjust dosage or withdraw or provide added natural food sources of potassium; potassium tablets should be avoided wherever possible, as bleeding or obstructive ulceration of the small bowel has been associated with their use; potassium levels should be especially watched if the patient is on digitalis or steroids, or if hepatic coma is impending.

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SIDE EFFECTS: The use of pargyline may be associated with orthostatic hypotension. Mild constipation, slight edema, dry mouth, sweating, increased appetite, arthralgia, nausea and vomiting, headache, insomnia, difficulty in micturition, nightmares, impotence, delayed ejaculation, rash, and purpura have been encountered with pargyline. Hyperexcitability, increased neuromuscular activity (muscle twitching) and other extra-pyramidal symptoms have been reported. Drug fever is extremely rare. Congestive heart failure has been reported in a few patients with reduced cardiac reserve. Nocturia has been observed with the combination. If side effects persist, despite symptomatic therapy or reduction of the dose, discontinue the drug.

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Science And Human Values

The brain in human beings has developed much further than it has in animals. The differences between the two brains are related to the function of those parts which have developed much further in humans. Basically those parts concerned with emotional reactions and instinctive drives are similar in animals and man. From observations on how disease and drugs affect the mental life we have come to recognize that emotional reactions have their neurological basis in certain parts of the brain and that other areas are particularly concerned with memory, others with speech, sight, hearing, etc.

We know also that the complex activities of the nervous system are profoundly influenced by biochemical factors, such as the secretion of the endocrine glands carried to the brain blood. There are still many details of which we are ignorant. We do not yet know how nerve cells behave when we think, or how memories are stored and recalled. Nevertheless, the progress made so far suggests that these are not inherently insoluble problems even though we do not possess the detailed knowledge to solve them. But it is likely that we shall find some activity of the brain correlated with every recognizable activity of the mind and ultimately we shall possesss explanations of these mental activities in physiological and biochemical terms.

In the meanwhile there have been offered explanations of some mental activity in the form of psychological interpretations. The psychologist in his laboratory is studying many aspects of normal mental activity such as perception, learning, memory and language. He attempts to correlate brain damage with those functions in sick people as well as in animals. He studies individual intelligence and specific capacities.

Analytical psychology has sought to provide an explanation of human behavior in terms of mental factors, some of which are held to be unconscious. This type of psychology although it is concerned with people who went to a doctor because they had symptoms which troubled them, made it clear that unconscious mental processes play an important part in the lives of normal people also. Parallel with development of analytical psychology, anthropology and social psychology have been demonstrating the profound influence of social forces of various kinds upon our mental attitudes and beliefs.

All of these trends of thought in their different ways have tended to change man's ideas about himself. They have brought into some questions the concept of "freedom of the will," whether man is really a rational being, whether his individuality which is largely molded from infancy by his social environment is really a "unique" structure. Moreover the concept of individuality has been undermined in a more subtle way by the fact that all these modes of thought are concerned with the psychological features or nervous structures which man has in common with everyone else or with particular groups of people who share his characteristics and less with the individual man. What we really need is a unifying comprehensive conception which can integrate what we have learned about man from science and what man is in his feelings, emotions, or what philosophers call the "private" experiences of persons.

To achieve this we have to regard persons as values in themselves and not as reducible to either physico-chemical systems or bundles of psychological trends as impulses. This would mean that although science is an end in itself to the scientist, where other people are concerned the end must be the possibility of their greater fulfillment as persons. Neurophysiology and psychology give us important information about human behavior, but they are only parts of the whole. If we think of ways in which we may achieve the greater fulfillment of human beings, then we can begin to employ the method of science in the grand design of making man reach his highest potentiality, both in his rational approach to the external world and in his emotional maturity.

In order to approach this ideal we have to have some understanding of human values. In the course and as a result of the evolutionary process, man has developed systems of values. In the individual these, as we know, are the product of numerous complex factors including his family life, social circumstances, cultural traditions, education and many others. Since man is a social animal his values arise in society and interpenetrate his social and personal relationships. The question is to what extent do these factors promote or retard enrichment of the individual's consciousness. Do these given values promote or conflict with the highest individual self-fulfillment.

There are peoples whose values and ethics are different than ours and have developed from other sources than ours, and they also claim for their values the same ethical principle that it is intended for the highest self-fulfillment. However, individual actions are more empirical than general and ethical views may change in the light of changing knowledge and as new fresh problems have to be faced. Viewed in this light, values require analysis as to how well they function to promote or conflict with tendencies which are held to be the essence of life itself. Accordingly we cannot indefinitely disregard what science teaches us about human nature. We believe the universe to operate

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upon rational laws. It is unreasonable to treat values as beyond the criticism of reason.

Man seems to have a strong disposition to fit his beliefs into a unified system. But what we believe about the nature of man is likely to influence the way in which we behave towards him. But our belief about man's nature is already being greatly illuminated by various scientific disciplines. The morality of science is its respect for truth. It rejects all attempts to curb freedom of inquiry and expression by any form of authoritarianism. There are no concepts which are beyond challenge. We hold with Abelard that "all truth even the highest is and should be accessible to test. By doubting we are led to inquire and by inquiry we perceive the truth." The habit of testing and correcting a concept by its consequences in experience has been the spring within the movement of our civilization ever since.

Values then are not to be considered beyond the criticism of reason, even though behind a theory of value lies an act of faith that the real purpose of life is and should be maximum self-fulfillment. It is up to science to analyze the consequences of this principle and assist mankind toward its goal.

L.H.N.

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Science Tools: 18. The Plethysmograph And The Physiology Of Veins

Since the time of Harvey, physicians have thought of the veins as channels for returning blood from the tissues to the heart. Because it was not known that the veins were under the influence of the nervous system and hormones, a vague idea existed that the veins were passive conduits for venous return. However since the veins were muscular and distensible it was supposed that their dilatation or narrowing in various clinical conditions resulted from distension when the veins were overfilled and contraction when the venous system contained less blood. In other words, responsiveness by nature of elasticity of muscular coat of the veins.

At the turn of the century the idea came into existence of a veno-motor tone[1] and it was recognized that veins contract and dilate as an important contribution to a useful distribution of the blood under a variety of circumstances in health and disease. Since most of the blood is in the veins which are highly distensible, one could reason teleologically that active responsiveness of these capacity vessels should be essential to the well being of the organism. Suppose all the veins of the circulation were to increase their tone, obviously the venous pressure will increase. If the peripheral veins were to constrict more than do the more centrally placed veins, then the volume of the peripheral veins would be reduced and the more centrally located veins would show a proportionately increased volume.

The highlights of recent studies of the veins involve some basic concepts which were derived from the use of the plethysmograph in man.[2] If the veins of the extremity are congested in a controlled manner over a known range of pressure there results a simultaneous stepwise increase in volume of these veins. This pressure volume characteristic of the veins can be observed and measured by constructing a pressure volume curve. If it is low it represents venous constriction and if the curve is high, it means venous dilation. There are other methods of study which have been used especially in special situations but basically the results do not differ from those obtained by the plethysmograph.

If the patient is exposed to a cold environment (68°) there results a constriction of the peripheral veins but these follow by five minutes arteriolar constriction which occurs immediately. In a hot environment[3] (78-80°) there is a distinct difference in the response of veins and arterioles. The veins do not dilate further from the state as observed when the patient is completely warm.

One of the most fundamental problems of maintaining the circulation of man is induced by the standing posture.[4] When a six foot tall man stands up from recumbency, the pressure of the veins in his legs will rise 80-90 mm Hg. This rise in pressure in a highly distensible system will result in a large shift of blood towards the dependent veins of the body. Unless compensatory peripheral vascular responses occur, inevitably there would result a drop in filling pressure in the right atrium and a reduced cardiac output and perhaps inadequate cerebral circulation. One of the important responses in man to the standing posture is that of constriction of the peripheral veins. This response would prevent too great an amount of blood from pooling in this area.

In exercise there is no constriction of veins of the forearm of the normal individual but if exercise is severe constriction of the veins of the arms does occur which undoubtedly facilitates the shift of blood towards the right atrium with an increase in cardiac output which is necessary in exercise.

We know now that the veins are innervated by venoconstrictor sympathetic nerves and many of the stimuli so far discussed produce their effects by the efficient impulses of the sympathetic nerves. It therefore would be expected that nor-epinephrine, the neurohormone of the sympathetic system which is known to constrict the arterioles, would also result in constriction of the veins.[5] Plethysmographic studies do in fact reveal that of the numerous vaso pressor drugs, nor-epinephrine is in fact the most powerful constrictor of veins. Epinephrin produces an increase in blood flow but also causes venous constriction simultaneously.

It would be expected that if a patient is given an agent that interferes with sympathetic nerve activity then venoconstriction would be inhibited and the regulation of venous tone might be impaired. The clinical importance of this observation is that patients on acute hypertensive drugs like reserpine, guanethadine acid, methyldopa, may experience not only lessened arteriolar resistance, but also lessened venomotor responses.[6] The postural hypotension that follows the use of such drugs becomes readily explainable as part loss of venomotor responses to the standing position. Filling pressure in the right atrium is reduced and this leads to a fall in cardiac output when the patient stands. The arterial pressure falls and cerebral blood flow diminishes so that the patient may faint, especially if he already suffers from some degree of cerebral vascular disease.

Studies on the responses of veins in various clinical states has also clarified our understanding of the increased venous pressure in heart failure.[7] A patient with congestive heart failure who exercises, shows a stimulaneous increase of venous pressure and increase of venous tone. The blood shifts from the arms towards the central circulation and this response can be abolished by blocking agents. In other words the tone of the veins is increased in heart failure along with the known increase in blood volume. The old idea that heart failure causes increased venous pressure because the failing heart cannot evacuate the venous reservoir thus requires serious revision by introducing the concept of active venous constriction and participation in the production of increased venous pressure.

The recent studies on the physiology of veins has helped clarify the reason for venous dilatation in the legs during pregnancy, during general anesthesia, amyl nitrite. We have supposed that the apparent propensity of pregnant women to get varicose veins and to show prominence of the veins of the lower extremities was due to the congesting effect of the enlarged arteries. But Wood has shown that there is also a reduction of the venous tone during the third trimester of pregnancy, since the veins are more distensible, not merely in the legs but also in the arms.

Thus we find basic studies on the physiology of veins has helped clarify many obscure observations in clinical medicine. We have found that the function of the veins is more complex than that of a simple passive channel for blood from the peripheral tissues to the heart. The veins constrict or dilate in response to various stimuli so that they maintain a useful distribution of blood volume. The responses of the veins are of particular clinical importance in heart failure in that constriction of veins seems to be the primary mechanism for the increased venous pressure in heart failure both at rest and during exercise. It has clarified the reason for unfavorable responses to venous anti-hypertensive drugs. It has shown that in pregnancy the veins actively dilate and that distension of leg veins in this state are not due alone to uterine pressure on the abdominal veins. It has revealed that amyl nitrite dilates veins, reduces venous return and eases the burden on a heart suffering from an anginal attack.

L.H.N.

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Liver Function And Endocrine Balance

The liver plays an important role in the maintenance of homeostasis in the mammalian organism. In a recent symposium on liver function and endocrine balance, how the liver response to hydrocortisone, glucagon, insulin, are extensively investigated and reported.

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Yates[1] studied the relationship between liver blood flow and steroid metabolism. He found that the liver removes hydrocortisone from the blood flowing through it. If the plasma level of hydrocortisone rises the rate of hormonal removal increases and if plasma levels fall the rate of removal drops. This is a form of passiva-self-regulation but shows that the main corticosteroid removal process is in the liver. The big question of course is what does the liver do with this hormone.

Weber et al.[2] by a beautiful series of studies showed that hydrocortisone functions as an inducer of key hepatic enzymes involved in gluconeogenesis. However the end product of the gluconeogenic reaction sequence, glucose, has no influence on the inducing action of this reaction. He injected steroid hormones and found the same enzymes induced as when diabetes was produced, or the rats were starved, or there was an excess amount of steroids in animals carrying ACTH secretory transplantable pituitary tumors, all states in which insulin in inoperative.

Further studies by the same authors showed that insulin suppresses the biosynthesis of hepatic gluconeogenic enzymes. Insulin transfers glucose through cell membranes into peripheral cells and promotes glycogenesis, through increasing a different set of enzymes, the biosynthesis of glycogen. Here again it is not the blood sugar level that acts as an inducer of the synthesis of glycogen. In short there is an antagonistic action between hydrocortisone and insulin on hepatic enzymes. Weber was finally led to postulate that the four key gluconeogenic enzymes are produced on the same functional genome unit and he also predicted that the three glycolytic enzymes may be produced on another such genetic unit. This working hypothesis —that the key enzymes both in gluconeogenesis and in glycolysis would react similarly to hormonal regulatory influence, allows for further exploring the control mechanisms of gluconeogenesis.

With the technique of isolated rat liver perfusion, Miller obtained serial quantitative collections of expired labelled CO_2 and serial sampling of blood at regular intervals for appropriate analyses of glucose, urea, and free amino acid levels. In this way he was able to study the effect of insulin, glucagon and hydrocortisone on the isolated liver of a rat. He found that hydrocortisone perfused through—the isolated liver did not increase protein catabolism nor effect a change in glucose utilization or glycogenesis. In the intact animal however hydrocortisone appears to suppress utilization of glucose and promote protein catabolism and glycogenesis. This clearly suggests that in the intact animal hydrocortisone removed by the liver must give rise to certain substances which act only by recirculation through the liver. Is this the way hydrocortisone produces lysis of lymphoid cells in the rest of the body. We have here a glimpse of a new function of the liver, hormones circulating through it removed by it, processed into new materials which now act upon the rest of the body.

Several years ago Miller studying the effect of glucagon and insulin upon the isolated liver preparation of the rat showed that glucagon in very minute doses evoked glycogenolysis, elicited a remarkable enhancement of protein catabolism as measured by urea production and suppressed oxidation of glucose. These effects occurred whether the livers were filled or empty of glycogen. However if he pretreated his isolated livers with insulin during perfusion, it prevented the protein breakdown by glucagon, but had no effect on glycogenolysis. Miller's further studies showed that glucagon acted not on plasma proteins but on liver proteins to produce protein catabolism. He further showed that insulin not only neutralizes the protein catabolic effect of glucagon but also reverses the suppressed oxidation of glucose to CO_2 and H_2O.

It was not so long ago when the opinion of authorities were heavily in favor of the view that insulin had no direct effect on the liver. Miller presents proof for the opposite view that insulin does have a demonstrable direct effect on the isolated liver. These effects were demonstrable on the oxidation of glucose, catabolism of liver proteins and on the regulation of the free amino-acid levels of the blood following perfusion of the liver. Miller concludes that insulin facilitates oxidation of glucose by the isolated liver and is grossly an antagonist of glucagon which suppresses glucose oxidation by the liver.

It is clear we are on the threshold of a new understanding of the role of the liver in endocrine balance. It takes up hormones like hydrocortisone insulin, glucagon and the anti-diuretic hormone. With regard to hydrocortisone it seems not merely to take it up but to reprocess it into new molecules which in recirculation produce new effects upon the liver. Perhaps these new as yet unknown substances are the vehicle whereby other effects of the cortico steroids like lysis of lymphocytes takes place. We may now expect much rapid progress in this new field of hormonal regulation by the liver.

L.H.N.

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Curable Hypertension Due To Aldosterone Secreting Tumors Of The Adrenal Cortex

It is well known that aldosterone secreting tumors of the adrenal cortex can produce hypertension, a hypertension which is called "essential," unassociated with normal renal function and without hypokalemia. The real problem was how to differentiate this kind of primary aldosteronism from secondary aldosteronism found in patients with renal artery stenosis or nephrosclerosis. Conn,[1] in 1963, suggested that "it is likely that we will eventually use blood levels of renin and angiotensin to distinguish aldosteronism due to a tumor from aldosteronism secondary to a renal disorder which is still in the stage of benign hypertension."

It could be reasoned that if there is no impairment of renal circulation or cardiac function, then a rise in blood pressure caused by adrenal aldosterone secreting tumor would stretch the juxtaglomerular cells in the afferent glomerular arteriole and lead to a reduction or even suppression of renin production. At this time methods for renin and angiotensin estimation had not yet been developed sufficiently to allow for a good evaluation of abnormally low levels of these substances in blood. The reasoning, however, seemed supported by observations in normal subjects who are given daily injections of aldosterone. They develop expanded blood volume, hypertension but no immediate hypokalemia.

Conn was acutely aware of the fact that after removal of an aldosterone secreting tumor, the remaining cortical tissue was unable to produce normal quantities for a long time and this of course suggested that normal aldosterone production was dependent upon the release of renal renin. Accordingly chronic suppression of the renin angiotensin aldosterone system (RAAS) by the autonomous tumor was the real cause of post-operative aldosteronopenia.

In 1964 Boucher, Veyrant and de Champlain[2] published a method for the determination of plasma renin activity in the peripheral blood. Utilizing this method Conn was able to show that in hypertension associated with secondary aldosteronism the RAAS is proceeding in high gear. On the other in ten consecutive cases of primary aldosteronism, in which the tumors were removed at his hospital, the renin angiotensin system is severely suppressed. When he tried to evoke an increase in renin production in these patients by sodium restriction, and upright posture he failed although in normal patients this occurs.

The tumors which were removed from the adrenals in his patients with primary aldosteronism were the same as those which pathologists in the past had shrugged off as "non-functioning cortical adenomas and as incidental adrenal adenomas.

Since patients with renovascular hypertension exhibit plasma renin values far in excess of those observed in normal people under similar circumstances of testing, while patients with essential hypertension due to an aldosterone secreting tumor reveal greatly suppressed renin activity in the blood, a method is now available to distinguish the patients with aldosterone producing tumors on the basis of the severe suppression of plasma renin activity. The unique combination of over-production of aldosterone together with suppression of the renin-angiotensin system is characteristic only of the existence of an aldosterone secreting tumor. This diagnostic combination now affords great security and confidence to the physician that he can by operation cure a certain percentage of his cases of "essential" hypertension by removing an aldosterone secreting adrenal tumor.

A careful review of the past histories in Conn cases for the last eleven years reveals further that the hypertension that was cured by removal of an aldosterone producing tumor and who had persistent hypertension for 10-15 years, had not been hypokalemic until the very end of their illness. This would mean that hypertension due to primary aldosteronism can exist in the absence of hypokalemia for many years. Until recently such patients were diagnosed as having "essential" hypertension. One other study[3] showed that 25 per cent of patients with essential hypertension do exhibit gross overproduction of aldosterone also without hypokalemia. In anothers study[4] plasma renin was found subnormal in over 20 per cent of cases of hypertension unassociated with renal artery stenosis.

It is thus very striking how large is the number of patients of essential hypertension with plasma renin values below the lower limit of the normal range. However such studies now in progress in Conn's laboratory make it quite possible that as many as 20 per cent of patients with essential hypertension have curable hypertension on the basis of an aldosterone secreting tumor. Such a prediction is quite justified on the basis of recently reported post-mortem studies[5,6] of the adrenals of 220 patients who during life had had hypertension as compared with a group of 220 that had been normotensive during life. The results showed that in the hypertensive group a single well encapsulated adenoma indistinguishable, grossly and microscopically from aldosterone secreting tumors was found in 20.5 per cent of the hypertensive group and in only 1.8 per cent of normotensive cases.

Obviously this means that we must do further research in this area. The combination of overproduction of aldosterone and suppressed renin activity should detect primary aldosteronism in hypertensive patients who because they maintain normal serum electrolyte levels are now classified as having "essential" hypertension. The demonstration that adrenal cortical aldosterone producing tumors on removal leads to normal blood pressure is an important breakthrough, because it makes every patient with "essential" hypertension suspect of harboring an aldosterone secreting tumor and further suggests that a goodly number of them will have it and therefore be curable.

Conn's suggestion that 20 per cent of patients with essential hypertension will have as its cause a small aldosterone producing cortical adenoma must now be taken seriously. It means that the potentiality exists of curing many thousands of hypertensive patients. Urgently needed is a simple method for determining renin or of renin activity with which to screen our hypertensive population.

L.H.N.

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Sixty-Five And Over:
2. His Care And Management

Age is opportunity no less than youth itself
but in another dress.—Longfellow

Recently an official pronouncement[1] stressed that there are no problems of people over 65 except those imposed by retirement that are not problems of all other age groups. This is a myth which leaves entirely out of account the physiologic changes that take place with age and how manifest diseases are modified by them. The interaction of changes due to the aging process and specific pathologic states produce baffling clinical pictures only too well known to the seasoned clinician experienced in caring for older men and women regardless of their chronological age. The aphorism "Disease in the aged is characterized by multiplicity, chronicity and duplicity" is perhaps the best characterization of the problem.

One pitfall to be avoided by physicians and social workers is stereotyped diagnostic thinking. It leads to many serious errors in the care and management of the older patient. It narrows down the possibilities of sickness in old people to heart disease, strokes, chronic arthritis and malignant disease. This leads to lack of clinical investigation and to overlooking of remedial conditions that can be detected by careful clinical and laboratory studies. There is little question that the altered reactions of the aged to disease have a profound effect upon the picture of disease learned in a younger patient.

An atypical onset is common with less pain and less anxiety on the part of the patient. Atypical symptoms are often seen in the form of little or no constitutional reactions such as fever or leucocytosis. An atypical course of the disease may cause the initial phases to be overlooked completely. These features are well illustrated by acute appendicitis in older people in whom the onset is not violent, perforation occurs early, often with the formation of localized abscess that may simulate a neoplasm of the descending colon. Zeman[2] describes another example: the case of an old woman whose diagnosis was arteriosclerotic cerebral thrombosis until autopsy revealed cerebral embolism from subacute bacterial endocarditis. In short, we must be alert to avoid errors in the management of the elderly patient.

It is highly desirable that we make an effort to conscientiously understand each patient, his early life, his background, his personal problems, how the patient views himself, for in addition to being relieved of his pain or suffering, he needs help in adjusting his troubles to his ongoing life. Social maladjustments may in fact present themselves in the form of bizarre symptoms. The good sense and the significance of the complaints of an aged patient should not be underestimated, for with age there is a tendency to accept pain and discomfort as inevitable.

Each patient must be thoroughly examined since minor lesions are often disclosed that are remediable and may cause more discomfort to the patient than more serious disorders to which he has grown accustomed. Particular attention must be paid to neurologic and psychiatric problems. Under the diagnosis of apoplexy is grouped a variety of cerebral disorders of most varied causation. Among these are cerebral hemorrhage, thrombosis, embolism, primary and metastatic tumors, acute infectious meningitis due either to meningococcus or pneumococcus. Then there are the traumatic lesions of which subdural hematoma is important because of its insidious onset, the ease

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Therapeutic Effects

The acute phase of subdeltoid bursitis, tendinitis and associated periarticular inflammation usually responds promptly and dramatically to phenylbutazone. Pain and tenderness may be relieved within 24-48 hours and mobility of the affected arm quickly restored. Full recovery is frequently achieved within 7-10 days so that therapy is generally of short duration. Calcific deposits are not specifically affected by treatment, but their presence does not appear to retard symptomatic improvement.

Phenylbutazone has not replaced physiotherapy, x-ray treatment, or local injections of hydrocortisone in the more chronic conditions, but it may advantageously be combined with these measures.

Contraindications

Edema, danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. Because of the increased possibility of toxic reactions, the drug should not be given when the patient is senile, or when other potent chemotherapeutic agents are given concurrently. Large doses of Butazolidin alka are contraindicated in patients with glaucoma.

Precautions

Before prescribing, the physician should obtain a detailed history and perform a complete physical and laboratory examination, including a blood count. The patient should be kept under close supervision and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools. Regular blood counts should be made. The drug should be used with greater care in the elderly.

Warning

If coumarin-type anticoagulants are given simultaneously, the physician should watch for excessive increase in prothrombin time. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea and sulfonamide-type agents and insulin. Patients receiving such concomitant therapy should be carefully observed for this effect.

Adverse Reactions

The most common adverse reactions are nausea, edema and drug rash. The drug may reactivate a latent peptic ulcer. Infrequently, agranulocytosis, generalized allergic reaction, stomatitis, salivary gland enlargement, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug. Thrombocytopenic purpura and aplastic anemia are also possible side effects. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently.

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with which the diagnosis can be missed, and because it is completely curable by surgical intervention.

The practitioner taking care of the aged must be familiar with the psychiatric problems of old age. He must be able to differentiate between the eccentricities of the elderly from true psychotic manifestations. Many of the abnormalities of mind occurring in later life have already begun in youth. This was aptly expressed by an English social worker, Miss Agnes Maud Royden: "If you want to be a dear old lady at 70 you must begin early, say at 17."

The text-books of psychiatry offer little help to the practitioner in this area because for the most part they discuss only "senile psychosis" and "psychosis with arteriosclerosis." They do not help the practitioner to clarify the problem he is confronted with by a disturbed patient. We must rule out a possible drug intoxication such as bromides or barbiturates which even in small doses produce symptoms indistinguishable from true psychosis. He must search for nutritional deficiencies, especially thiamin chloride, niacin and riboflavin, the absence of which may cause severe upsets. He must be alert to aging endocrine disorders particularly hypothyroidism, diabetes, and hypogonadism.

The influence of cardiac failure, of surgical operations and of emotional strains upon the brain can lead to mental disorders that may be reversible, or they may aggravate pre-existing disturbances of function. Post-operative psychoses resulting from medications, pre-operative tensions, and loss of sleep and dream states, have an excellent prognosis. Today the depressions of the aged are combatted with drugs with great success although the milder ones clear up spontaneously.

The practitioner and social worker must pay particular attention to the interaction of the medical and social problems and must devote themselves to the understanding of the patients personality to utilize the great power of psychotherapy. Caring for the aged is worthwhile and gratifying and full of rewards for the physician even though the pitfalls are numerous and diagnostic hazards abound. There are still great gaps in knowledge, but even now better health and more happiness can be brought to many of the aged sick. We must realize that in the words of Longfellow, "Age is opportunity no less than youth itself but in another dress." This we must emphasize to our patients.

Social workers and physicians have in the higher age groups magnificent opportunities to serve in the highest tradition of their profession in bringing to the forsaken, the rejected, the warmth and support of their personalities and in giving real understanding to those who in their extremity sorely need someone who cares.

L.H.N.

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Contradictions In Science And The Scientist: 2.

The chief argument for the theory of the prevailing culture (Zeitgeist) and for the gradualness and continuity of the progress of science is the discovery of multiples in discovery and invention. It is well recognized that discoveries and new insights tend to be independent, but synchronous in the minds of unassociated contemporaries. The great discovery or insight almost always turns out to have had a long history of somewhat less specific or at any rate less publicized anticipations. Often the history extends through decades or even a couple of cultures.

Robert K. Merton lists more than a score of rediscoveries between 1828 and 1927. In 1922 Agburn and Thomas published their list of 148 multiples mostly doublets. Merton Elmor and Barber have studied intensively 264 multiple discoveries finding 179 of them to be doublets, 51 triplets and so on up to 2 discoveries each of which was made independently nine times! Just a few are necessary to prove the point. Napier and Leibnitz each invented logarithms in 1614. Newton and Leibnitz worried over which of them was first in the invention of the calculus.

Charles Bell in 1811 and Francois Magendie in 1822 and Johannes Mueller in 1826 formulated the doctrine of specific nerve energies which in a sense had been anticipated by John Locke. Adams and Leverrier discovered Neptune within a few days of each other in 1845 because the obvious thing to do was predict another planet from a study of the pertubations of Uranus. Helmholtz in 1852 found himself anticipated by Thomas Young in 1821 in color theory and gave him full credit. The most famous case may be Alfred Russel Wallace's independent formulation in 1858 of what was also Charles Darwin's theory of natural selection.

This theory of multiples seems to establish a major cognitive dissonance in the thinking of scientists. It promotes a resistance to a belief in multiples. It threatens the scientists priority in the discovery and thus his most carefully nurtured ambition, the demonstration of his own originality. The existence of multiples means that orginality is at least externally determined in part. However, it is a threat to the scientists identity, one that we cannot very well accept. Whether it interferes very much with the quality and quantity of his contribution is of course another question.

The most prevalent generator of cognitive dissonance is surely egoism. In science between pride and objectivity is a very common conflict. Max Planck once said that important theories marked for death by the discovery of contradictory evidence seldom die before their authors. An author can't abandon his theory even though it means turning traitor to science and retarding its advance. How can he when the theory which he has built up has become a part of his image of himself. To abandon it would be an act of self-mutilation. And so it becomes easier to live with the dissonance, suppress fresh evidence from cognition as far as possible. Thus dissonance due to egoism gets resolved in science by a division of energies. The egoist furnishes the drive needed for research and a reviewer or editor provides the objectivity that cuts the claims down to size. Nowadays there is some evidence that egoism is being reduced by the explosion of science which forces many investigators into teams and produces papers with multiple authors. This forces the use of the method of multiple working hypotheses of Chamberlain which greatly minimizes the dangers of egoism.

Scientists seem to hold many incompatable values simultaneously a form of ambivalence. Boring mentions a few such as: publish promptly *but* not prematurely; remain receptive to new ideas, *but* resist intellectual facts; be erudite *but* do not sacrifice research to reading; teach the young researcher *but* do not sacrifice research to teaching; attend to details *but* ignore inconsequentials; accept tutelage from the wise *but* maintain your own independence.

The final dissonance Boring[1] considers is personal bias. Individual difference in values and attitudes are familiar subject matter for the psychology of personality. The interactions of dissents is one of the most important social dynamics for the operation of our civilization. Loyalty creates dissonance, loyalty to a school or a principle carried often in the national culture. Hatred creates dissonance and so does the literature of controversy. These are all obvious and can be found in the bitter dissonances in the polemical journals.

It is obvious that operating in face of dissonance in belief and attitude is a characteristic of man, whereas the scientific culture demands that man deplore that fact and that he strive always for his own consistency. Man is far from perfect, he must be content to accept very considerable limitations on the range of thinking by the use of symbolism, letting a symbol stand for a complex and another symbol for a higher complex of symbols. That is why language is such a powerful tool in the extension of thinking. But beyond such things, he must live with the dissonances because his brain does not give him the power to unify the universe of his thoughts.

He adjusts to them by remaining unaware of them until the discrepancy forces itself upon him if it ever does. Then he may alter his belief and action a rare occurrence, or he may suppress from ready cognizance one-half of the contradiction or he may by rationalization rack the incompatibility into the comformity of a false resolution.

Boring concludes that the major dissonances in science between the goal of consistency and the fact of persistent inconsistency is not as a practical matter really resolvable because of the prevailing culture, because of our nature. At any rate although scientific and cultural progress may be hindered by dissonance it is not necessarily blocked for there is always waiting off in the future that most objective of critics posterity.

L.H.N.

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Nuclear Medicine Comes Of Age

Four factors have brought the youthful specialty of nuclear medicine to full maturity. One is the Atomic Energy Commission which has furnished to our profession isotopes in great variety and purity. Another is the United States Veterans Administration which had the vision to recognize nuclear medicine's potentiality and organized departments in its various hospitals for research training of personnel and for practical application in clinical problems. Another is the development and perfection of radioisotope scanning instruments particularly photoscanning and the invention of the scintillation camera by Ager.[1,2] By this invention the required instrumentation has reached a degree of perfection that places it in the category of utility equipment and will permit the extension of the technique from major research and teaching centers to other hospitals.

The final important factor in development of nuclear medicine is the organization of the Society of Nuclear Medicine which is dedicated to professional excellence in the field.[3] It was founded in 1953 and has grown rapidly. It now has a membership of 2,700. Through its publication, *The Journal of Nuclear Medicine,* the society provides a forum for presentation of reports dealing with the clinical use of radioactive materials. The American College of Physicians has recognized the importance of nuclear medicine to the internist by sponsoring special post-graduate courses on the subject this year and last, and the American Medical Association has established a special committee on Nuclear Medicine that is considering the desirability of establishing a section on nuclear medicine.

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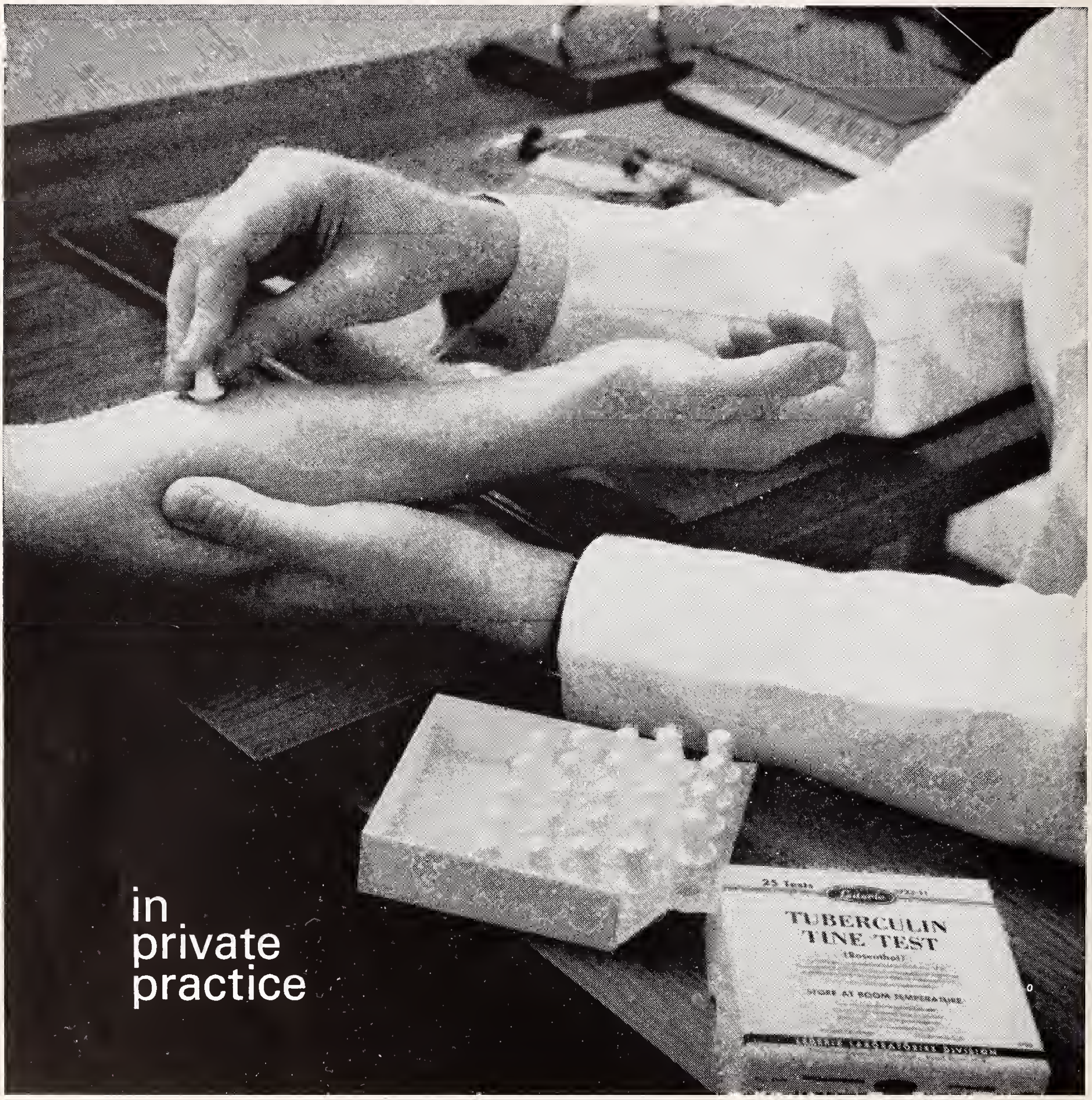

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The contributions that nuclear medicine can now make to diagnosis and treatment are so important that all physicians should familiarize themselves with the ways in which this specialty may help them in their practice. Physicians should be prepared to avail themselves of these procedures for the benefit of their patients. There is no doubt that a large majority of hospitals and community diagnostic centers will soon be performing nuclear medical procedures on a routine basis. It is therefore appropriate to consider what we can expect from this new discipline.

The value of scanning procedures in determining the size of the thyroid gland and the presence of "hot" and "cold" nodules is well known.[4] Also well known is the fact that radioisotope scanning has a high level of accuracy in localizing brain tumors[5] and other cerebral lesions.[6]

Less well known but certainly of equal practical importance is the observation that abnormalities in pulmonary blood flow, for example that are caused by neoplastic compression of an artery or by infarction can easily be detected by photoscanning the lungs after intravenous injections of aggregates of radioiodine labelled serum albumen.[7, 8]

Disturbances in ventilatory function due to bronchial obstruction also can be readily demonstrated by photoscanning after inhalation of a radioaerosol.[8] The procedures are of great potential usefulness in the studies of patients suspected of having pulmonary emboli, infarcts or lesions interfering with bronchial or arterial patency.

Abnormalities particularly space occupying lesions in the liver, spleen or kidney are easily shown by photoscanning procedures and promising results have been reported in demonstrating pancreatic tumors and pancreatitis.[9]

In cases of suspected placenta previa or in preparations for amniocentesis accurate localization of the site of placental implantation may be readily accomplished with antero-posterior and lateral scanning procedures.[10] Finally localization of lesions and determination of the distribution of bone marrow are possible by employing position emitting isotopes and the Ager scintillation camera.[2]

One would suppose that all of this new science has burst upon us suddenly, because we see the recent dramatic advances in scanning which has focused our attention on nuclear need. But like most other things that flash into our view, there is a long history behind it. Nuclear medicine has been flourishing and gradually growing for the past 30 years. Beginning in 1936 to 1939 there began fundamental tracer studies of thyroid, physiology of hematopoisis and employing the radioisotopes of iodine, phosphorous and iron. Internists and pediatricians were quick to extend their laboratory observations to practical clinical diagnosis and treatment procedures.

Of course like all special techniques it should not lead to the abdication of the physician from using his clinical wisdom and experience, but should contribute to that wisdom, so that in time some of the results from the special tests can be anticipated by careful physical examinations and appropriate deductions from a more alert interpretation of symptoms and signs.

L.H.N.

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Smoking And Thrombosis

Nearly all medical studies demonstrate a statistical association between heavy cigarette smoking and mortality from coronary artery disease. Death rates in middle-aged men from coronary heart disease were found to be from 50-150 per cent higher among heavy cigarette smokers than among those who do not smoke.[1] A statistical association of this type does not prove that heavy cigarette smoking causes coronary heart disease but the data strongly suggest that heavy cigarette smoking may contribute to or accelerate the development of coronary artery disease or its complications.

Doyle's[2] prospective studies of large groups has verified that the risk of myocardial infarction is substantially greater in cigarette smokers (one pack or more daily) than in non-smokers or former smokers. His data suggests that the effect of smoking in relation to myocardial infarction is an acute one, since the risk reverted to that of non-smokers on cessation of smoking. He found no gradient for coronary artery disease risk in relation to years of exposure and he found no relationship between cigarette smoking and the incidence of angina pectoris.

Despite many studies there is as yet no theoretical explanation or experimental basis for the statistical association between smoking and the higher cardiovascular mortality rates. The first step should be to investigate whether smoking increases the thrombotic tendency. If it does, the next step would be to seek verification of the results and the final step would be to consider the mechanisms involved.

Engleberg[3] has just reported on a series of 60 patients privately studied on the relation between smoking and thrombosis. In the course of studying the effect of smoking on serum lipids, he also made observations on the thrombotic tendency in the blood of habitual smokers twenty minutes after smoking two cigarettes. He used the Chandler[4] method to measure thrombus formation before and after smoking. He meticulously avoided contamination by residual traces of tissue thromboplastin by drawing the venous samples from different veins. He also did what good experimental design required by proving first that the results were highly reproducible.

The studies were completed on 60 patients, 40 men and 20 women 17-68 years of age. In 23 no change in the thrombotic tendency was found after smoking. In 34 patients the thrombotic tendency was found unequivocally increased. In three it was decreased. These results as tested by in-vitro thrombus formation indicate acceleration of thrombotic factors soon after smoking in the majority of smokers. This finding is in keeping with the epidemiological data.

The next problem is to determine by what mechanism does smoking accelerate thrombosis. Employing the method of multiple working hypotheses, a number of possibilities immediately present themselves. One is that smoking produces an increase in carbon monoxide hemoglobin up to 15-20 per cent which somehow promotes thrombosis. Another is that nicotine absorption itself sets into operation the thrombotic process. A third possibility is the well known effect of nicotine in liberating increased amounts of epinephrine which may be the real culprit in accelerating thrombosis. A fourth possibility is that smoke irritation in the bronchial mucosa liberates into the blood stream a thrombus inducing agent. Perhaps there are other possibilities as yet unidentified.

No information exists about the role of the irritated bronchial mucosa or carbon monoxide hemoglobin upon the thrombotic process. Whether it is possible to separate the role of nicotine itself from epinephrine which it liberates in promoting thrombosis has not been established. There are however much data in the literature that strongly suggest epinephrine may play a role.[5,6] Epinephrine was found to cause platelet adhesiveness, and aggregation which is a well recognized factor in formation of the platelet thrombus. This increased platelet adhesiveness and aggregation was found by Owen persistently in all conditions in which thrombosis is frequent as in atherosclerosis and diabetes. In short, if epinephrine increases platelet aggregation it could be the mechanism whereby smoking causes increase in the thrombotic tendency in over half of the subjects studied. If it is corroborated that epinephrine enhances thrombosis, this may be an important mechanism involved also in the effect of tension and stress in the etiology of acute myocardial infarction.

The authors were making observations on the thrombotic tendency and release of free fatty acids in the blood after smoking. They repeatedly found subjects in whom there was no change in the free fatty acids although the thrombosis time was shortened and others in whom the latter was unchanged after smoking but the serum free fatty acids increased. Clearly it is not the free fatty acids that have anything to do with the thrombotic tendency found in smoking.

Of course we must bear in mind that although human blood was used in these studies and a true arterial platelet-head thrombus was obtained in the Chandler rotating loop, this is an in-vitro technique and we are assuming that the results will parallel in-vivo events. However the findings of this study fit well with the epidemiological data. If borne out by the further investigation, they indicate that smoking results in a hyperthrombotic state in over half of the individuals.

In the presence of underlying atherosclerotic disease with scarred arteries this accelerated thrombotic tendency may well be the major additional factor that can precipitate an acute coronary thrombosis in smokers.

L.H.N.

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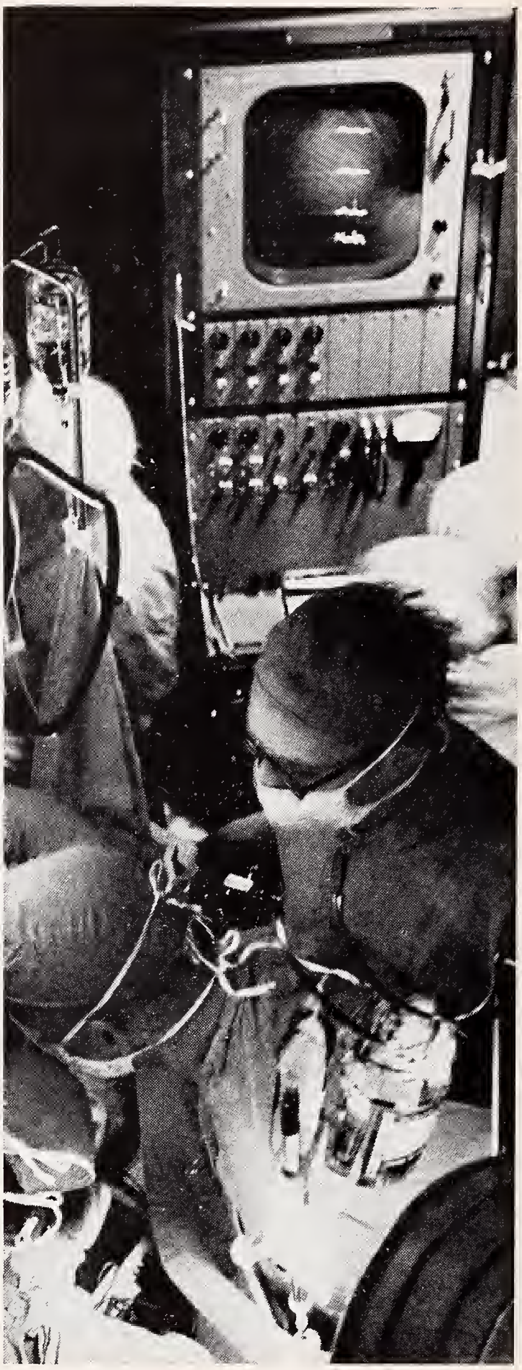

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Early Detection Of Hearing Loss

Jay W. Lerman, Ph.D. and Mark Ross, Ph.D.

■ Perhaps more than ever before society today places great emphasis on the need for education and technical training. The main channel through which this is accomplished is verbal communication. Any problems therefore, which disrupt this process would interfere with an individual's educational achievement. One major problem which interferes with verbal communication is a hearing loss. The degree of this interference depends upon many factors such as amount and type of hearing loss, intelligence of the child, socio-economic background, age loss was first incurred, and age loss was first detected. The emphasis in this paper will be placed upon detection of hearing loss, since all other habilitative procedures must necessarily follow this step.

The period of the normal child's greatest progress in speech and language development is between the ages of 12 months and 36 months. However, this is dependent upon adequate reception of verbal stimuli prior to and during this period. If a child has a hearing loss, his reception of speech and language will be impaired and therefore development of expressive speech and language will be adversely affected. The corollary of this is that the earlier a hearing loss is detected, the sooner treatment can be instituted, and therefore the less the consequent effect upon speech and language. The longer the delay in instituting proper treatment, whether this treatment is medical or educational, the greater the deleterious effect upon the child's educational achievement.

It is frequently believed that information regarding a child's hearing cannot be ascertained until he is capable of making a voluntary response. However recent research has indicated that valid information can be obtained as early as a few hours following birth. The following outline presents, normative responses to sound by children of different ages and means of eliciting these responses.

1. Birth to two months

Responses during this period follow an all-or-none principle. During this period it is necessary to produce an intense sound in order to elicit a response from the child. These responses take the form of crying, startle (Moro) reflex, cessation or diminution of activity, auropalpebral reflex (eye-blink) and the possible assumption of a listening attitude toward the end of this period. Basically a loud sound must be produced to elicit these responses; for example such auditory stimuli as that produced by a clacker, a bell, or a vigorous hand clap. Care must be exercised to ensure that the child is not responding to tactile or visual stimuli rather than the auditory stimuli.

2. Two to six months

Children within this age group are not as likely to produce startle responses to a loud sound, but may respond by seeking out the source of a sound (although not precisely localizing it). Responses within this age group may consist of widening the eyes, making searching movements with the head and/or eyes, and possible cessation of ongoing activity. An excellent procedure for testing a child in this age group (particularly the older child) is by seating him on the mother's lap with one examiner in front of the child observing its reactions, while an assistant produces the sound stimuli at various azimuths behind him. Various noisemakers can be used to produce the sound stimuli, such as squeakers, rattles, and crickets. In addition children of this age frequently respond to voiceless consonants, such as sss, ttt, ppp, kkk. Several responses should be observed to ensure valid results. Following a response, therefore, the examiner should regain the child's visual attention while the procedure is repeated. For some children, the best auditory stimuli for eliciting responses is the mother's voice; the test situation has to be structured differently in this case.

3. Six months to 12 months

At six months the child is beginning to become adept at localizing the source of a sound. An intense sound is not required. Perhaps the most suitable stimuli would be his mother's voice, calling the child's name, or familiar environmental noises. Attempts at imitating a sound should begin evolving around 9 months. At about 10 months to a year, the child should be beginning to develop receptive language and shows an ability to respond to simple commands such as "where is mommy?", "give me . . .", etc.

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4. Twelve months to twenty-four months

Reflex responses to sound are not as evident in this age group (Moro, APR). Similar procedures as that of the six months to twelve months age group can be instituted for this group. Localization responses should be quick and certain; the ability to respond to simple commands such as pointing to parts of the body or familiar pictures should be further developed. Soft, meaningful stimuli in a quiet room are the best stimuli for eliciting responses in this group.

5. Twenty-four months and older

Ruling out a gross hearing loss for children in this age group is essentially a continuation of previous procedures. The child's receptive language ability should now be at the level where he can respond meaningfully to more complex commands (e. g. "Bring the ball to mommy"). Attention should be paid to the existence and level of expressive speech and language.

A child in any age group for whom a hearing loss is suspected should be referred to a speech and hearing clinic for a complete audiological assesment. With the physical facilities in such a clinic more refined tests of hearing are possible. The armamentarium in a well equipped clinic make possible more precise tests of localization ability, controlled distraction tests, electro-dermal audiometry, conditioned orienting reflex audiometry speech audiometry, and conditioned play audiometry.

In summary, the physician can play a vital role in the detection of hearing loss in children by applying the above-screening procedures. A subsequent referral to a speech and hearing clinic for a more detailed evaluation of hearing and for educational management is highly recommended for those children for whom a hearing loss is suspected. The relationship between hearing loss and language retardation has been well documented. With the vital role which language plays in all life situations, the importance of early detection and early management of the hearing-impaired child cannot be over-emphasized.

THE FACULTY OF REASON IN MAN

Now the faculty of reason in one aspect may be said to be the indispensable agent in everything man has accomplished. It enables him to learn, to add knowledge and preserve it, to build up arts, sciences, and civilizations without limit. Yet, in another aspect, this same implement can as it were turn in his hand and become the enemy of all constructive activities. With its Ptolemaic systems, caloric fluids and phlogiston theories, reason has been deleterious enough even in the quite fields of science. It taught astronomers that planetary orbits are circular because the circle is the perfect curve; it proved that the number of planets could be no more than seven and enabled Hegel to deride the none the less successful search for an eighth by Adams and Le Verrier; and even today it probably exercises over free experiments a quite censorship far stronger than most of us would like to admit.

The history of medicine teaches us that when reason took a hand *there* it was not only truth that suffered. The rational system of a Stahl, a Brown, a Rush or a Broussais unfortunately did not exist in a mere metaphysical vacuum but at the bedside—and armed with opium, antimony, alcohol, mercury, the lancet and the purge. Thus the consequences of the confident use of reason in medicine have been gloomy enough. When the same implment has been applied to the general affairs of life the results have been even more dreadful. Few proscriptions, persecutions and massacres but have had their reasoned and logical justification. The various systems of doctrine that have held dominion over man have been demonstrated to be true beyond all question by rationalists of such power—to name only the greatest—as Aquinas and Calvin and Hegel and Marx. Guided by these master hands the intellect has shown itself more deadly than cholera or bubonic plague and far more cruel. It is a strange fact that this pestitential virulence of reason has never fired the ambition of some great sanitarian of the mind. The incompatibility with one another of all the great systems of doctrines might surely have been expected to provoke some curiosity about their nature.—Trotter, W.: Has the Intellect a Function? *Lancet* 1: 1419 (June 24) 1939.

Therapeutic Dilemma: Ruptured Intracranial Aneurysm In Pregnancy

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Introduction

■ Nothing is more devastatingly tragic than maternal mortality that wipes out the central figure of the family. Sudden maternal death is usually accompanied by fetal demise. Ruptured cerebral aneurysm during pregnancy has often filled this role of double assassin. The key physician in this potentially lethal sequence is the obstetrician, for it is most often he who starts the patient upon whatever therapeutic road she will follow. The neurosurgeon and the anesthesiologist cannot fulfil their roles if the obstetrician fails to recognise the gravity of the situation, or lacks the courage to advise proper therapy.

Intracranial aneurysms are rarely symptomatic prior to rupture. Sudden severe headache followed by disturbed sensorium, with or without unconsciousness are the usual presenting symptoms. The diagnosis is suspected when bloody cerebrospinal fluid is found in lumbar puncture, and confirmed by visualization of the aneurysm by carotid and/or vertebral arteriogram.

Incidence

Intracranial aneurysm in pregnancy has been estimated as occurring as often as once in 2,000 deliveries.[1,2] Bleakney has estimated that 40,000 women deliver each year possessing this lesion.[3] Wacker has stated that 80 per cent of aneurysms eventually rupture.[4] In pregnant women, Pedowitz and Perrell have reported 51 per cent of ruptures occur near term, when the hemodynamic changes of gestation are at peak.[5] Copelan and Mabon found that 83 per cent of ruptures occurred in the antepartum period, 4 per cent labor and 13 per cent in the postpartum period. One-half of the cases that ruptured during pregnancy did so between the 26th and 36th week.[2]

Mortality

The mortality rate in the majority of reported series appears to be between 40-50 per cent. McKissock and Walsh felt that there is probably an irreducible minimal mortality associated with "devastating first hemorrhage," as 30 per cent of deaths occur in the first 48 hours.[6] In non-surgically treated patients, recurrent hemorrhage becomes a significant factor with 50 per cent mortality within 8 weeks.[1] The second and third weeks after the initial subarachnoid hemorrhage is the commonest time for recurrence of bleeding. Laubstein et al. concluded that the mortality rate for pregnant and nonpregnant women was the same.[7] Barnes and Abbott found that unconsciousness with the onset of bleeding was associated with 100 per cent mortality and supervening unconsciousness with 86 per cent mortality. They concluded that subarachnoid hemorrhage was an extreme emergency that required immediate and agressive diagnosis and treatment.[8]

Viability Of The Fetus

The greatest deterrent to prompt, positive therapy is the question of viability of the fetus. There appears to be a distinct tendency to procrastinate with either conservative therapy or extracranial ligation until after delivery, or, subject the premature fetus to an early cesarean section, rather than undertake a major anesthetic and intracranial procedure. It is anachronistic that too often the patient with the greatest chance of a successful operative result is placed in double jeopardy because her fetus is considered viable, or, almost viable. Although major operations during pregnancy are not frequent, the gravid female usually withstands the procedure well, as does the fetus, providing that maternal hypotension that results in fetal hypoxia is avoided. Pool firmly states that these patients should be treated in the same manner *is if they were not pregnant.*[9,10]

Course Of Therapy

When the diagnosis of intracerebral aneurysm has been established, there are three possible courses of therapy:

1. Conservative.
2. Extracranial vascular occlusion.
3. Intracranial obliteration.

Conservative therapy

Despite the fact that Magee has shown that 28 per cent of subarachnoid hemorrhages occurred

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with the patient at complete inactivity, and 90 per cent without straining,[11] bed rest and sedation, with or without induced hypotension and/or hypothermia, remain common therapy. However, in the obstetric patient with her physiologically overloaded cardiovascular system, conservative treatment of ruptured intracranial aneurysm has often proven disastrous to one or both patients, and, has historically led to the use of agonal heroics and/or postmortem cesarean section in attempt to salvage the baby. Pool's chilling statistics, on conservatively treated patients confirm the fact that, these measures are avoidable if the physician has the courage to advise intracranial obliteration, instead of either of the more conservative courses and hope.[10]

Extracranial vascular occlusion

The rationale for carotid artery ligation is to reduce pressure and blood flow to the aneurysm and, hopefully encourage thrombosis. However, Bjorkesten and Troupp have shown that aneurysms grow and that spontaneous thrombosis is rare.[12] Aneurysms persist radiographically in 95 per cent of these cases and are subject to recurrent and often fatal rupture. Extracranial vascular occlusion has an associated mortality rate of 8-10 per cent and a late mortality of 20 per cent. In addition, morbidity from postligation hemiplegia and other neurological disability is distressingly high.[9] Carotid ligation appears better suited for carotid and posterior communicating artery aneurysms rather than to aneurysms of the anterior and middle cerebral arteries. Ligation has proven less satisfactory than intracranial obliteration although better than conservative therapy.[13]

Intracranial obliteration

Pool has stated unequivocally, that, in his opinion, cranial surgery is the ideal treatment for ruptured intracranial aneurysm.[9] Pregnant women who survive the initial bleeding episode, and, because they are young and generally in good health, often fall into Grade I or Grade II classification of risks,[14] unless the initial hemorrhagic damage to the brain is of the "devastating" variety. Hunt et al.[15] and Pool et al.[9] have urged that localizing procedures and definitive surgery be accomplished within 24 hours of admission in the young, good risk and relatively intact group of patients. Operative mortality should be as low as 5 per cent with theoretically no chance of recurrent hemorrhage. It is possible to delay definitive procedures for 5-8 days, since the greatest period of danger from recurrent hemorrhage is from 8-15 days. Although delay of more than 3 weeks after the initial episode increases the chances of surgical success, Pool states that more lives will be lost from recurrent hemorrhage than will be saved by such unwarranted delay.[9]

Anesthetic Considerations

It is an accepted fact that all analgesic and anesthetic drugs in common use cross the placenta and affect the fetus, with the exception of the highly ionized relaxant drugs.[16] Apgar has shown that the longer an anesthetic is administered to the mother, the nearer the fetal blood concentration of drug will approach the maternal concentration. For a fetus who has successfully completed the embryological developments of the first trimester, there is apparently little evidence to suggest that exposure to the anesthetic drugs in the middle and late trimesters is detrimental.

Maternal hypotension, either spontaneous or induced, has been shown repeatedly to be poorly tolerated at any time by the fetus which rapidly becomes hypoxic, acidotic, or both.

Induced Hypotension And Osmotic Diuretics

Hypotension and osmotic diuretics have greatly facilitated the surgical attack on intracranial aneurysms and vascular tumors, but their use on pregnant women has been considered contraindicated. Maternal induced hypotension has been shown by many investigators to be the cause of fetal hypoxia and acidosis.[17,18,19] Bruns et al.[20] and Battaglia et al.[21] have shown that osmotic diuretics have extremely dehydrating effects on the fetus. Nevertheless, we are aware of two successful cases in which diuretics were used during craniotomy in pregnant women; one for ruptured intracranial aneurysm followed 61 hours later by vaginal delivery of a normal child, the other for tuberculum sellae meningioma was delivered five months later. The latter case received both hypothermia and diuretics.[22]

Hypothermia

Recent reports in the literature indicate that hypothermia can be successfully used during gestation.[10,22,23,24,25] In many of the reported cases, the fetus was in the previable stage so that therapy could be immediately directed at the mother, but the outcome was still successful for the infant. Vandewater and Paul,[26] and Assali and Westin[27] have shown that the effects of hypothermia on the fetus parallel those changes in the mother. Davey et al.[23] and Burstein et al.[24] have reported, in detail, successful craniotomies for aneurysm in which the fetal heart was continuously monitored during hypothermia by fetal electrocardiogram. This provides a considerable degree of safety in regard to the well-being of the infant. The careful analyses of the fetal electrocardiograms of Davey's case by

Hess and Davis have described the responses of the fetus that now may be considered expectable.[28]

The insulating effects of the pregnancy make the induction of hypothermia in the pregnant woman a slow process in which the placenta must act as the organ of heat exchange for the products of gestation.

Summary

There is an increasing body of evidence that subarachnoid hemorrhage due to ruptured intracranial aneurysms during normal gestation should be treated as if the patient were not pregnant. Diagnosis and therapy should be undertaken aggressively and the good risk, neurologically intact patient with a proven intracranial aneurysm should undergo intracranial obliteration within 24 hours of admission, utilizing hypothermia as an adjunct to anesthesia. Mounting evidence shows that the fetus is quite capable of withstanding well-conducted induced maternal hypothermia. Continuously recorded fetal electrocardiogram is a necessary and valuable adjunct in monitoring the well-being of the baby.

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The Handicapped Child And The Law

Frederick J. Flynn, M.D.

■ For several years, Newington Hospital for Crippled Children has been working with children referred for learning disorders. This has resulted in the establishment of a Board of Admissions which is a multidisciplined group of persons who review each case and decide on diagnosis and disposition. This, in turn, has led to the development of a Class for Perceptually Handicapped Childen which is a pilot study devoted to educating teachers in methods of handling children with perceptual handicaps and to learning more about children with this type of disorder.

The recent changes in the general statutes in Connecticut pertaining to children who require special education have encouraged this report. These public acts concern children with physical handicaps, mental retardation, social and emotional handicaps, or neurological impairment affecting learning.

The seven public acts[1] are related to: Sending certain children to private institutions for special education (P.A. 507); special education for socially and emotionally maladjusted children and the neurologically impaired child (P.A. 206); out-of-State education of aphasic and perceptially handicapped children (P.A. 295); payment of transportation costs for children requiring special education (P.A. 279); provisions for educational and occupational training of physically handicapped or mentally retarded children (P.A. 203); special education of children under six years of age (P.A. 150); and scholarship aid for teachers of deaf or perceptually handicapped children (P.A. 294).

These acts and previous ones have resulted from enthusiastic effort on the part of the State Board of Education and parent organizations, such as the Organization for Perceptually Handicapped Children and the Association for Retarded Children. The content of these acts should be familiar to all of those persons dealing with such children. Throughout these public acts there is the phrase, "as defined in the regulations of the State Board of Education;" therefore, the interpretation of such terms as "perceptually handicapped," "neurological impairment," "physically handicapped," and also what is adequate for educating these children is entirely up to the State Board of Education. This presents a problem and leaves considerable responsibility in the hands of physicians in making the proper diagnosis so that the deserving child can receive full benefits of this legislation.

Experience at the Newington Hospital for Crippled Children with over two hundred children has led us to believe that it is impossible for one specialty to make a diagnosis and, therefore, we have incorporated in our evaluation, the team approach. A pediatrician, child psychiatrist, and persons representing speech-hearing, psychology, education, and social service are on our Board of Admissions. The multidisciplinary approach offers a check and balance system that helps avoid cultism and the development of unscientific theories so prevalent in this field today. We feel that it is impossible for one individual, regardless of his background, to come to a valid conclusion on a learning disability. Perhaps, teams like this could be set up throughout the State to assist the Board of Education in making adequate diagnoses.

There are many schools of thought on how to manage a child with a learning disorder. One such group believes that the teacher should treat the handicap and forget the etiology.[2] Another group feels that determining the etiology is important; for example, we have found that over ninety-five percent of children referred for educational difficulties have a behavior problem. These children could be called emotionally disturbed or perhaps perceptually handicapped. Accurate diagnoses will help the State Board of Education determine under which public act a child is entitled to assistance.

Throughout the literature[3] the child with a perceptual handicap has been assumed to have brain damage. In our experience this is not necessarily true. Genetic factors and psychiatric disturbances are equally important. Adequate medical evaluation is essential as it is now obvious that a given child may need psychotherapy and/or special education.

The following is a two-day method for screening of children with learning disorders that we find quite useful:

Screening by social service is the initial contact with the family and patient. Referral is also made to social service when a patient already receiving

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other care in this Hospital is suspected of having a perceptual handicap or other learning disorder.

If the screening procedure discloses a strong likelihood that the primary problem is not a perceptual handicap or other learning disorder, the child is not referred for further workup in the special diagnostic program. Instead, other recommendations and referrals are made in line with the child's apparent needs.

Previous medical, educational, and other pertinent data are secured by social service.

Electroencephalogram is obtained.

Special Diagnostic Clinic appointment is arranged after completion of the above. An examination by the involved disciplines is concentrated within a two-day period, as noted below.

FIRST DAY

8:00 a.m.	Eye
9:00 a.m.	Pediatric
10:15 a.m.	Speech-Hearing
1:00 p.m.	Psychiatry
2:30 p.m.	Education

SECOND DAY

10:00 a.m.	Psychology
1:30 p.m.	Occupational Therapy

Establishment of diagnosis and formulation of recommendations are carried out promptly by the Admissions Board. A patient seen in the Special Diagnostic Clinic is discussed at the Admissions Board meeting the week following.

Interpretation to parents of the findings and recommendations of the Admissions Board, and the enlisting of schools or other agencies to implement these recommendations are carried out by social service with the help of other departments as necessary.

Summary

We present a method of diagnosing and evaluating children with learning disorders. Recent changes in the statutes will make it necessary for the State of Connecticut to establish diagnostic centers for educational disorders and we suggest the use of this system. The Board of Education will need considerable support from the medical profession because of the phrase found throughout the statutes, "as defined in regulations of the State Board of Education."

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PSYCHOLOGY AND BEHAVIOR

It is an interesting question why psychology has not been concerned with the parts and pieces in which behavioral material comes, since it has devoted so much attention to the formation of perceptual units of the physical world. This neglect may be a result of the precocious growth of the science. Psychology almost completely skipped the descriptive phase which is emphasized in the early stages of most science; it had experimentalists and testers, it had its Wundt, its Ebbinghause and its Binet before it had its Vesalius, its Linnaeus or its Cuvier; in fact psychology has not yet had its Vesalius. Psychology must be alone among the sciences in having almost nothing to say about the occurrence of its phenomena in nature. If one wants to know about the distribution among men of long and of short units of behavior, of anger outbursts, of happy periods, of frustrating experiences, for example, one certainly should not turn to the scientist of behavior; he knows little more about these matters than laymen. It is interesting to note, however, that some specialized behavior sciences have been concerned with the units of behavior; this is a central problem, for example, in the language sciences and in musicology.—Barker, R. G.: Observation of Behavior: Ecological Approaches, *J. Mt. Sinai Hosp.,* 31: 268-284 (July-Aug.) 1964.

The Contributions Of The Horse To Knowledge Of The Heart And Circulation

II. Cardiac Catheterization And Ventricular Dynamics

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Introduction

■ The value of a new technique is measured by the success with which it meets the criteria for which it was devised and by the versatility with which it can be adapted and applied to new problems. An outstanding example is the catheterization of the chambers of the heart which not long ago brought the Nobel Prize to Forssmann, Cournand and Richards.

In 1929 Forssmann introduced a catheter into his own right auricle via a vein incised at the left elbow and obtained a remarkable roentgenograph of the catheter in position after he had walked the considerable distance from his own laboratory to the radiographic department of his hospital.[1, 2] Forssmann foresaw a role for the technique in administering drugs directly into the heart, especially in patients with circulatory failure in whom the intravenous route had proved inadequate. Although the technique was used in this way at first, it soon found a more useful role in introducing radio-opaque drugs into the heart and main vessels.[3]

It was, however, its use by Cournand and his associates to measure the cardiac output, that is to say, the volume of blood ejected by one or the other ventricle per beat, or per minute, that brought the technique to its full fruition.[4, 5] This work finally permitted the application to man of the basic formulation of Fick,[6] which since 1870 had promised the accurate determination of the cardiac output. In that year, at a meeting of a local medical and scientific society in Würzburg, Fick had proposed the method in a report that was published only in a two paragraph abstract which is translated as follows:

> Herr Fick gave a lecture on the measurement of the quantity of blood ejected by the ventricle of the heart in each systole, a figure which is without doubt of the greatest importance to determine. Nevertheless the most different opinions have been given of it. While Th. Young placed the value in question at 45 cc., the newer textbooks of physiology give much higher values, which, based on the estimations of Volkmann and Vierordt, run as high as 180. In such circumstances it is unusual that no one has yet hit upon the following obvious method by which this important value may be determined directly, at least in animals. One determines how much oxygen an animal takes out of the air in a given time and how much carbon dioxide it gives off. During the experiment one obtains a sample of arterial and a sample of venous blood. In both the content of oxygen and the content of carbon dioxide are to be determined. The difference in oxygen contents tells how much oxygen each cubic centimeter of blood takes up in its course through the lungs, and since one knows the total quantity of oxygen absorbed in a given time, one can calculate how many cubic centimeters of blood passed through the lungs in this time, or, if one divides by the number of heartbeats in this time, how many cubic centimeters of blood are ejected with each beat of the heart. The corresponding calculation with the quantities of carbon dioxide gives a determination of the same value, which serves as a control for the first.
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> Since two gas pumps are required to carry out this method, the lecturer is unfortunately not able to report experimental findings. He will therefore give only a calculation of the extent of the circulation in man according to the schema of the method here described, based on more or less arbitrary data. According to experiments carried out by Scheffer in Ludwig's laboratory, one cc. of arterial blood of the dog contains 0.146 cc. of oxygen (measured at 0° temperature and 1 meter Hg pressure); 1 cc. of venous dog's blood contains 0.0905 cc. of oxygen. Each cubic centimeter of blood takes up in its passage through the lungs 0.0555 cc. Assume that this were also true in man. Assume further that a man

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> absorbs 833 g. of oxygen out of the air in 24 hours. At 0° and 1 m. pressure this would occupy a space of 433-200 cc. Accordingly 5 cc.'s of oxygen would be absorbed by the lungs every second. In order to make possible this absorption, there must be, according to the above assumption, a blood flow through the lungs of 5 ÷ 0.0555 cc., or 90 cc. per second. Assuming finally that 7 systoles take place in 6 seconds, 77 cc. of blood would be ejected with each systole of the ventricle.

In the application of the Fick principle, unequivocal and indeed simple as it was in theory, there was soon found to be a singular difficulty of the first magnitude, which remained insurmountable until it was solved by the method of catheterization. The production of CO_2 and intake of O_2 were readily and accurately measured by the classical respiratory methods of gas collection and analysis; arterial puncture, or determination of alveolar concentration of O_2 or CO_2 yielded reliable information about the arterial content of these gases, but it was soon found that only in the right ventricle could a reasonably valid sample of mixed venous blood be found to give gas content by which the A-V difference in O_2 or CO_2 could be calculated for use in the final Fick formula:

$$\text{Cardiac Output} = \frac{\text{Minute Consumption } O_2 \text{ or production of } CO_2}{\text{A-V } O_2 \text{ or } CO_2 \text{ difference}}$$

Marshall was able to study the cardiac output in dogs by transthoracic puncture of the right ventricle,[7] but in man, a variety of indirect methods such as the acetylene method of Grollman,[8] had to be devised to determine, with difficulty and uncertainty, the A-V difference of O_2 for introduction into the Fick formula.

The combination of cardiac catheterization and the Fick principle in Cournand's laboratory for the first time made it possible to determine cardiac output in man, and if for such a purpose the method had little use in clinical practice, it provided the means for evaluating and eventually calibrating other techniques which are more readily applicable, such as the dilution method. More than that however, the method made possible the diagnosis of a variety of congenital heart defects which betray themselves by unusual gas concentration in samples withdrawn from various cavities of the heart as they are entered by the catheter tip, or by aberrant pressures encountered in the process, so that today the method is one of the principal tools of diagnosis in a wide variety of congenital and acquired cardiac defects now susceptible to surgical correction.[9, 10, 11]

Within recent years measurements of the dynamics of cardiac contraction in health and disease have called for a complete reassessment of the conventional view of the regulation of cardiac output by the operation of Starling's Law, which relates the vigor of cardiac contraction, and in consequence the amount of systolic ejection, to the end-diastolic pressure.[12] Finally, modification of the technique through increasingly skillful use of the catheter makes it possible to carry out comparable studies on other organs, such as the liver and the kidney.[13, 14]

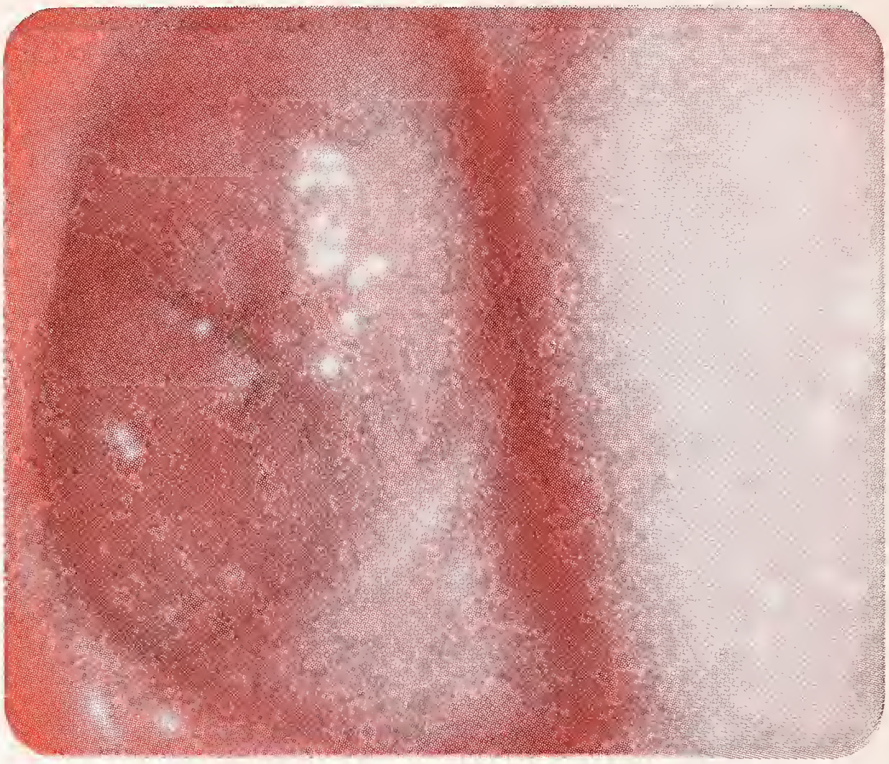
To this subject of such vast interest, the horse has contributed much in two areas; in the first use of cardiac catheterization in the hands of Magendie and Bernard to obtain the temperature of mixed venous and arterial blood, and its subsequent use by Chauveau and Marey to determine the sequence and intracavity dynamics of atrial and ventricular contractions.

Francois Magendie And Claude Bernard; Cardiac Catheterization

In 1844 two of the great physiologists of France, or of the whole world for that matter, were working together at the Collège de France in Paris. Their collaboration had begun as teacher and pupil, but the pupil was rapidly gaining his intellectual independence, and his master was not unhappy to acknowledge that he was being surpassed. François Magendie was the teacher and Claude Bernard the pupil; both gained immeasurably from their collaboration, and so did the world of science.

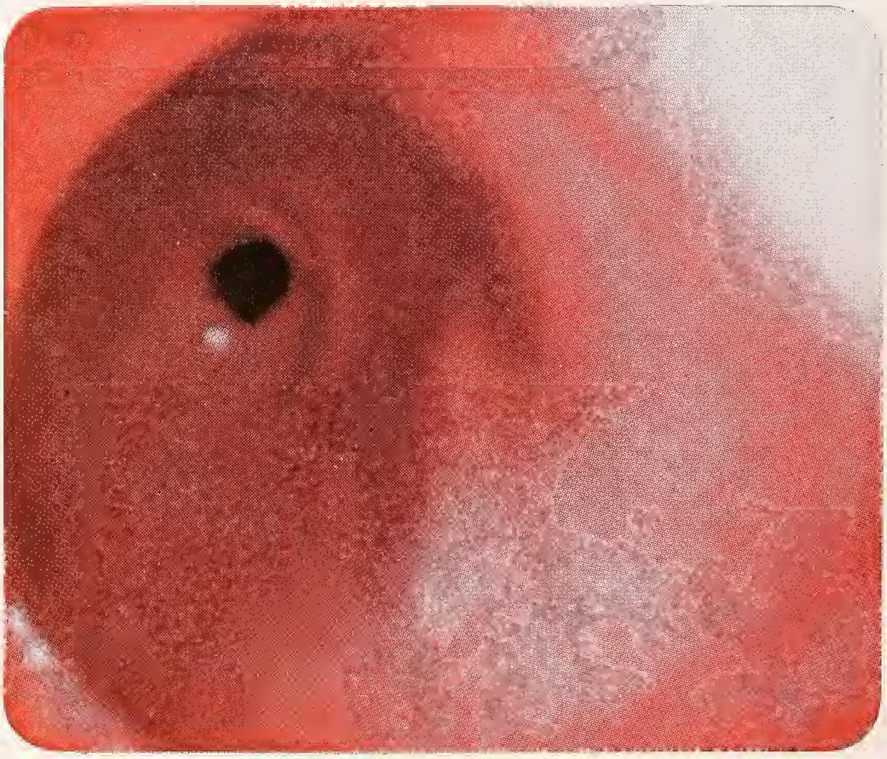
François Magendie belonged to one of the great lineages of French science,[15, 16] a protégé of the mathematician Laplace, who himself had been associated with Lavoisier in the early proof of the identity of combustion and respiration as essentially a process of oxidation of carbon and hydrogen in atmospheric oxygen. Son of a surgeon attracted to Paris by the political fervor of the Revolution, young Magendie, who had been born in Bordeaux in 1783, was raised with complete permissiveness and little attention of any kind, according to his father's interpretation of the doctrines of Jean Jacques Rousseau; he was ten years old before he could read or write. He finally rebelled against the lack of discipline and parental help when his father decided the boy should learn to make his own shoes as a sign of independence. Preferring to be less independent, and better shod, François demanded and thereafter obtained a more conventional upbringing that ultimately won him the Grand Prize of the Convention at 14 for his knowledge of the "rights of man and the constitution," and made possible his entry to medical school, where he gained a prosectorship in Anatomy, and an internship in the Hospitals of Paris at the age of 18. On graduation, and despite his remarkable surgical skill, he found himself by no means ideally suited for the practice of medicine, because of a critical attitude about most of current therapy at a time when venesection and purgation

Intragastric photography studies[1]



A/ E. B., male, age 48. Normal antral contraction. Pyloric opening is not seen. It is difficult to differentiate a deep prepyloric contraction from a "pyloric fleurette" or true pylorus.

B/ Same subject after 6 mg. of propantheline bromide intravenously; antral contractions ceased. The pyloric orifice remained open and was easily identified. Better visualization of the antrum was also obtained.



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1. Barowsky, H.; Greene, L., and Bennett, R.: Investigators' Clinical Report. Photographs courtesy of Drs. H. Barowsky, L. Greene and R. Bennett.
2. Barowsky, H.; Greene, L., and Paulo, D.: Paper read at Meeting of American Society for Gastrointestinal Endoscopy, Montreal, Canada, May 25-27, 1965.

SEARLE

Research in the Service of Medicine

on a heroic scale, and an esoteric polypharmacy had not yet disappeared. Nevertheless he was an ideal research professor, empirical, always in search of the new, and interested only in awakening in his students the spirit of investigation.

Eschewing the literary polish and careful circumlocution of most of the distinguished lecturers of his era, he gave most of his lectures extemporaneously, letting his students share his doubts and perplexities. He had the courage to attempt original experiments before his students and joined in their mirth when the results went contrary to his predictions.[17]

Magendie's first experiments were on the role of the veins in absorbing drugs injected subcutaneously, on the passive role of the stomach in vomiting, and on the elasticity of arteries, but his greatest fame rests on the discovery of the function of the dorsal and ventral roots. In this discovery, in which the British Anatomist Charles Bell shared, as we acknowledge in referring to the Law of Bell and Magendie, the afferent function of the dorsal roots and the efferent function of the ventral roots were for the first time made clear. A discovery ranking fully with that of Hales on the function of the spinal cord in reflex activity, it was one of the cornerstones of the vast growth of neurophysiology in the 19th century, and of the all-pervasive doctrine of nervism, which insisted on the nervous control of bodily functions of all kinds, and seemed to confirm the aphorism of van Helmont, *homo interior totus nervus,* until the discovery of the myogenic nature of the heart-beat by Gaskell and of hormones by Bayliss and Starling suggested that nervous control was not the only regulator of bodily functions.

In the early 1830's there came to Paris from Lyon a young ex-pharmacist's apprentice, Claude Bernard.[18] He had in part been disillusioned by his mentor's practice of throwing all spoiled and unused odds and ends of prescriptions into a common jar, from which he periodically compounded, after judicious additions, his most popular panacea, the theriac, a pharmaceutical monstrosity dating back to the antidotes prepared by court pharmacists for the kings of ancient times. Mithridates was one, who by daily small dosages of all known poisons, hoped to render himself immune to larger doses surreptitiously administered by those with murderous intent. It was usually prepared in a heavy syrup as an electuary, and its name, corrupted to *treacle,* is still given to heavy syrups in England.

The young Claude Bernard was also an ardent theater-goer and had even written a play. It was this juvenile effort that gave him the courage to abandon his apprenticeship and go to Paris in the hope of finding a publisher. The play was of no importance, it was in fact quite bad, showing signs of certain and possibly not accidental resemblances to Shakespeare, and the publisher advised the young man to forsake play-writing and go to medical school. Such was the simplicity of the age that he took the advice, was admitted to the School of Medicine in Paris, and was soon at work studying to become a physician. Here he displayed a truly remarkable ability at dissection which brought him to Magendie's attention, and in time he became Magendie's colleague in the laboratory at the Col lège de France. At first they collaborated on projects of Magendie's choosing, but soon Bernard struck out on his own, renting a small laboratory in the Latin Quarter in the narrow Passage du Commerce St. André des-Arts. It was in fact the very building that had housed Marat's l'Ami du Peuple, and was just across the passage from the house formerly occupied by Doctor Guillotine, where his first experiments on sheep had been carried out. Bernard may well have been more of a scientist than a physician, but he had faith in the future of medicine, believing that in its own day and time it would attain the goal of the scientific method, which at that time had become so well established in the physical sciences. This meant to him the experimental study of the factors that determine the appearance of all the phenomena to be observed in the living body, to such a degree that the physician can control them. This goal, attained as yet only in part, and perhaps never to be fully realized, is essentially the goal that Medicine always has had, and still retains.

By 1844 there was much active collaboration between the two devoted physiologists; Claude Bernard was well launched on work of his own, but Magendie's irrascibility did not always drive the young man to the sanctuary of his own laboratory in the Passage du Commerce. Magendie was at the time one of the consultants to the War Department as Chairman of a Committee on Equine Hygiene, and had available, at the Veterinary College at Alfort, a considerable number of aged and ailing horses from the artillery and cavalry; most of them with glanders. In consequence the two proposed to profit from such resources by carrying out physiological experiments.

One problem may have come directly from Lavoisier and Laplace to Magendie, but if not, it was beginning to be discussed in many physiological centers in Europe; it concerned the site of generation of animal heat. To the ancients, of course, heat was one of the elements of all matter, existing as fire along with earth, air, and water, and there was no real appreciation of the energy equivalent of heat; when things burned they simply lost this element. Animal heat was, of course, the very source of life, and it was maintained according to some accounts, by a sort of vestal flame in the cavity of the heart which warmed the arterial blood, and was thereby distributed to the rest of the body to maintain life. Arterial blood, according to this formulation, carried, or constituted the Vital Spirit. The lungs existed to form an insulating, air-cooling jacket protecting the rest of the body from the excessive heat of the heart. Other formulations made the liver the source of the body heat; its association with digestion via the portal vein had been noticed and it was only natural for it to become, in the minds of many physicians, the oven of the body, where food was cooked or "concocted."

These theories survived the demonstration by Harvey of the circulation, and even Richard Lower's perfusion of the circulation in an intact animal with beer, injected into one vein as blood was withdrawn by another, until practically all the blood was replaced by beer without stopping the heart. It ought indeed to have been apparent that there could be no significant source of heat in the heart, or other kind of chemical reaction there, if blood could be thus replaced by a nonliving watery fluid. All of these imaginative theories were finally eliminated after Lavoisier in 1776 published his first report on the identity of animal respiration and combustion; before he was guillotined in the last spasms of the Terror he made it amply clear that respiration in the living animal is nothing more than an intracorporeal combustion of carbon and hydrogen by the oxygen provided by breathing, and that for equal amounts of CO_2 evolved combustion and respiration give out the same amount of heat.[19] Lavoisier thus placed the genesis of heat precisely where it has since remained, in the metabolism of carbon and hydrogen-containing substrata, burned in the oxygen brought into the body by breathing.

The actual site of this oxidation was unclear to Lavoisier, and he suggested that the blood might simply function as a carrier of carbon dioxide and oxygen to and from the lungs. He was inclined to favor a second hypothesis, however, that placed the site of oxidation in the lungs themselves, where the oxygen of the outer air first came in contact with the blood, presumably bearing the carbon and hydrogen in some readily metabolized form. The strength of Lavoisier's opinion in the scientific world of those days was such that the hypothesis of intrapulmonary oxidation was generally accepted. Fully accepted it was not, however, and before long serious doubts began to be raised against the great chemist's view. A number of workers identified carbon dioxide as a constituent of venous blood; it was apparently not formed *de novo* in the lungs, and the relation of oxygen to the change in color from the dark hue of venous blood to the florid color of arterial blood set many workers along the correct pathway of understanding oxygen transport.

A clear method of testing the concept occurred to some workers. Obviously, if all bodily oxidation takes place in the lungs, the heat so liberated should warm the arterial blood, so that this fluid would be warmer than the venous blood. The experiment was tried in a number of ways, and with varying results. It eventually became clear that the only appropriate approach would have to be in the living animal, and that the temperature, especially of the venous blood, would have to be determined in a well-mixed sample, because of the varying temperatures in the several channels contributing to the overall venous return. Collard de Martigny and Malgaigne in Paris, and George Liebig in Germany recognized this point clearly, and made more or less successful catheterizations of the right and left ventricular cavities in dogs. They inserted the bulbs of mercury thermometer into the right and left ventricles via the jugular vien and carotid or innominate arteries respectively. Quite contrary to all expectation, they found that the mixed venous blood in the right ventricle was actually warmer than that in the left chamber. The lungs thus served to cool the blood, not to warm it![20,21]

These isolated experiments were by no means satisfying. Collard de Martigny and Malgaigne found their thermometers disproportionately large, and had to perform a considerable dissection to catheterize even the right ventricle. To gain access to the left ventricle they had to use the brachiocephalic trunk, which required a partial pneumothorax and artificial respiration. Liebig's evidence was hardly more clear-cut, requiring considerable extrapolation. Bernard and Magendie immediately saw the advantage of employing the horse in such experiments and accordingly set about as follows:[22]

"In 1844, Magendie, as president of a commission on equine hygiene for the minister of war, had at his disposal a large number of horses with glanders which, destined to be slaughtered, were utilized for physiology. Together we carried out at that time experiments on the temperature of the blood in the cavities of the heart. This is how I operated. The animal being alive and standing, I exposed the carotid artery and the jugular vein, and by each route I introduced a long thermometer into the heart. In these experiments the right heart always showed itself to be warmer than the left heart. When the animal was fasting the difference seemed less, and it became greater when the animal was in full digestion, and especially when it had completed a long run which had elevated the general temperature of the body."

This became one of Claude Bernard's favorite studies. He returned to the subject some eleven years later in 1856,[23] reporting similar experiments on dogs and sheep, again with the use of glass thermometers, and still again twenty years later, when he placed thermocouples at the catheter tips, and assembled the whole of his data into book form.[22] By means of multiple thermocouples placed throughout the organs and tissues of the body he was able to demonstrate that all the tissues of the body generate heat and thus all share in the metabolic use of oxygen and participate in the generation of carbon dioxide and heat.

In our own experiments, on anesthetized horses, Magendie and Bernard's studies were repeated, using carefully matched thermistors as temperature sensors, which were mounted at the tips of the catheters employed for recording ventricular pressures. Proof that the catheters were in the ventricles was obtained from the pressure recordings which indicated a diastolic pressure of zero or slightly below, in the presence of expected systolic pressures. Using the same Wheatstone bridge to measure the resistance of both thermistor elements, the temperature in the right ventricle was found to be 101.0°F. and that in the left 100.9°F. in one experiment. These values demonstrate that, as Magendie and Bernard found, the temperature of mixed venous blood is indeed higher than that of arterial blood. They support Bernard's conclusion that while all tissues generate heat, some, lying near or at the body surface dissipate more than they receive or generate, and thus serve as sites of a net heat loss, and that the lungs serve in this sense as an extension of the external body surface to cool the blood flowing throug them.

Chauveau And Marey; The Dynamics Of Cardiac Contraction Via Cardiac Catheterization

Jean Baptiste August Chauveau, born in 1837, took his degree in veterinary medicine at the famous French school of veterinary medicine at Alfort in 1858. Beginning his teaching career as Prosector in Anatomy, he was in time promoted to Professor of Experimental and Comparative Medicine at the veterinary school in Lyon, where, in addition to his other duties, he studied medicine, and in 1875 received the M.D. Degree. He was recalled to Paris in 1886 as Inspector General of the French veterinary school and was appointed Professor of General Pathology at the Museum of Natural History, remaining there until the end of his life in 1917. He founded the *Révue de la Tuberculose* and edited the *Journal de Physiologie et de Pathologie Générale.*

His career encompassed three phases, of which the second is of interest in this connection; anatomical, physiological and pathological. The first, anatomical, phase culminated in 1855-57 in the publication of a classical treatise, *Traitée d'anatomie comparée des animaux domestiques,* which went through many editions and was widely translated. The second phase began with studies on the circulation stimulated by the work to be recounted later on the nature of the heart sounds, and ended with significant collaboration with Marey that is our main interest here.

The third and final phase, and the longest-lasting, began as his fruitful physiological collaboration with Marey came to an end with his appointment as Director of the veterinary school at Lyon, where, taking his medical degree as mentioned above, he came to the view that there is but one medicine, applicable equally to man and animals. One of the first fruits of this approach to comparative medicine was the recognition of the similarity of bovine and human tuberculosis. This work was followed by studies on vaccination, septicemia, gas gangrene, and contagion by contact and the air. His physiological interests continued in important studies on the energetics of muscular work.

Chauveau began his cardiovascular studies in 1855 with the reinvestigation, in the horse, of Hope's early experiments on the production of the heart sounds.[24, 25] The spinal cord was severed at the atlanto-occipital junction, artificial respiration was started, and the chest was opened to expose the heart. Observing the events of the cardiac cycle, he divided it into three phases: 1) auricular systole while the ventricles were in diastole, 2) ventricular systole while the auricles were in diastole and 3) diastole in both chambers. During the latter phase he made a most significant observation; blood flowed freely from the great veins into the auricles, and from them into the relaxed ventricles through widely opened A-V orifices, so that auricular systole, which was relatively weak and ejected little blood, did not add significantly to the filling of the heart. As a conclusion from these experiments, he tended to agree with Rouanet's valvular theory of the genesis of the heart sounds.

In 1857 Chauveau continued his work on the horse in a study designed to meet the suggestion of others that the apex beat is created by the recoil of the ventricles, that is, from its ballistic effect. Preparing a horse as before, Chauveau occluded with his fingers the systolic outflow via the pulmonary artery and aorta and noted that the equine counterpart of the apex beat continued, despite the absence of any ejection whatever.[26] This is essentially the same technique with which recent workers have demonstrated that the ballistocardiogram is not primarily caused by ejection of blood from the ventricle.

In a final paper in this preliminary series, Chauveau attacked the general theory of the production of murmurs, pointing out that in those heard as the result of dilatation or constriction of a blood vessel, the murmur arises at the region of expansion, whether relative or actual, and not at the point of constriction, nor in the constricted segment. He pointed out that the expansion must be in great enough proportion, while yet not so great as to reduce the force of the inflowing blood. Modern studies on stream-line and turbulent flow have amply confirmed Chauveau's findings.[27, 28]

The name of Etienne J. Marey is far better known, for it is he who was the great exponent of the application of the graphic method to the living animal in the 19th century. He is not quite its founder, for this honor must be reserved for Carl Ludwig, who first recorded the blood pressure on a rotating, smoked drum in 1847. Born in Beaune in 1830, Marey came to Paris at the age of 20, and enrolled in the School of Medicine. He gained his Doctorate in Medicine in 1860, presenting a thesis on his studies of the circulation in health and disease, which showed the influence of much of what is recounted in this series about blood pressure and the cause of the heart sounds.[29] His first experiments were concerned with the measurement of the velocity of the pulse wave by means of pneumatic pulse pickups stationed along the course of an artery, each connected to a recording stylus lined up with the others to write on a revolving drum, by which the progress of the pulse along the artery could be timed. He included a discussion of Chauveau's work in this thesis. From the beginning, then, Marey was interested in the heart and circulation, in studying the physical laws of bodily mechanisms, and in applying to biological problems the method of instrumental recording. The dynamics of the heart and circulation were his favorite subjects, and he is to be credited with discovery of the refractory period in the heart, and with the first direct recording of the electrocardiogram in 1876 by means of the capillary electrometer. He is responsible for originally establishing the conventional recording speed in electrocardiography of 2.5 cm. per sec. Later in life he became particularly interested in locomotion and in the flight of birds, and devised a system of serial photography, which he called Chronophotography, which is the precursor of cinematography and time-lapse photography.

How Marey and Chauveau came to work together we do not know. From the days of Magendie there had been a close liason between the College de France and the Veterinary School at Alfort, and both workers had an interest in the problem they chose as their first task: "the graphic determination of the relation of the cardiac inpulse to the movements of the auricle and the ventricle, obtained by means of a recording apparatus."[30 31] What we now know as the diastole of the heart was to the ancients the active part of the cardiac cycle, produced by some internal effervescence or ebullition, causing at the same time the pulse wave in the arteries and an outward swelling of the ventricles which gave the cardiac impulse or the apex beat to the anterior chest wall. Harvey clearly demonstrated its inaccuracy, and made it apparent that the heart ejects blood to cause the arterial pulse and at the same time hardens and lifts up to strike the anterior chest wall during systole. But with the passage of years, as Harvey was honored more and read less, the old idea cropped up again, as a development of Laennec's view that atrial systole was responsible for the diastolic filling of the heart, and for the second sound. This matter was brought up at a meeting of the Societé de Biologie, and in its favor the behavior of the snake and turtle heart was quoted.

This concept of atrial systole as the cause of ventricular filling must have been completely unacceptable to Chauveau, who had noted the early diastolic filling of the heart in the horse, and was satisfied that it preceded atrial systole. Marey assembled a recording system consisting of a catheter with a balloon at the tip, connected by tubing to a tambour and writing lever. The balloon was inserted through a skin incision on the chest of a horse into a pocket in the interspace above the ventricular impulse. Another catheter was double (Figure I), with two balloons a few centimeters apart, each with its own lumen connected to a tambour for recording. It was introduced via an incision in the jugular vein into the right side of the heart. The dimensions were so chosen that when the tip of the catheter was engaged in the right ventricle, the second balloon lay in the atrium. An ingenious device reduced the pressures transmitted by the chamber contractions so that the recording tambours were not overstressed. Everything being adjusted, the drum was started, and a record was obtained of the atrial beat, the ventri-

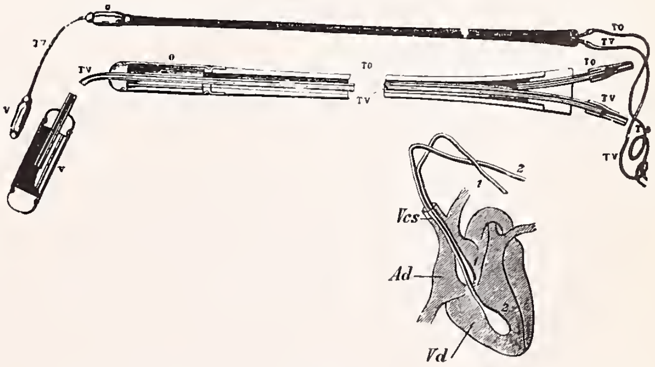

FIGURE I

Marey's equipment for recording atrial and ventricular pressures, and a schematic drawing showing the balloons in place in the right atrium and ventricle.

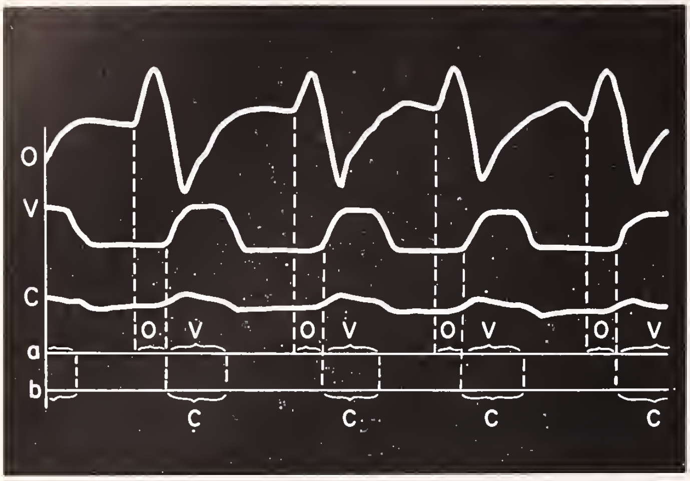

Figure II

Chauveau and Marey's record of right atrial systole (o), ventricular systole (V), and the cardiac impulse (c), showing that the ventricular impulse (apex beat) is synchronous with ventricular and not atrial systole. (Redrawn from Ref. 30).

cular beat, and, below, the ventricular impulse, as seen in Figure II. There can be no doubt that the cardiac cycle begins with atrial systole, to be followed shortly by ventricular systole, and that the ventricular impulse coincides with ventricular systole.

With this apparatus Chauveau and Marey then catheterized both sides of the heart. On the right both the atrium and the ventricle were accessible via the jugular, while on the left, only the left ventricle could be reached via the carotid; records were thus obtained from right atrium, right ventricle, and left ventricle (Figure III). After recording, the catheter bulbs were placed at various depths in water tanks, and by this maneuver the recording devices were calibrated and the pressure generated by the contraction of the three chambers was calculated. The systolic pressure in the right auricle was 2.5 mm. Hg that in the right ventricle 25 mm. Hg and that in the left ventricle 128 mm. Hg.[32]

Marey's Law And Chauveau's Maneuver

In 1859 Marey described his newly invented sphygmograph in a paper presented to the Societé de Biologie.[33] This apparatus, a compact and portable pulse pick-up and recording panel, could be attached to the human forearm, to give pulse records without difficulty. To ascertain if the instrument could give any indication of alteration in arterial pressure, Marey digitally occluded the femoral arteries, then while the sphygmograph was in operation, released the occlusion and noted the fall in base line of the record. It was clear to Marey "that when one obliterates a large artery by means of a complete compression of a vessel, it is apparent that one takes away a large path for the outflow of blood, and by the action of the simplest laws of hydraulics, one increases in consequence the pressure in the rest of the system." This concept was put to experimental test, and Marey wrote: "It can be seen in animal experiments that if, in an animal, a large artery is ligated, while a manometer connected to some other part of the arterial system is indicating the pressure in this class of vessel, under the influence of the ligature the tension is seen to augment, to drop in turn when the vessel is untied and becomes patent.

"In this case, the frequency of the heart beats ought to be quite different from one moment to the other, low during the ligature, that is to say during the high pressure, while the frequency ought to increase when the artery is open and the pressure falls. Unfortunately, as in most experiments on living animals, the problem is complex, and the pain that is produced is enough in some cases to increase the frequency of the pulse at the moment of the arterial ligation." The experiments that he carried out, by compressing the femoral arteries, produced a fall in heart rate of approximately one eighth. On this basis he enunciated the famous law to which his name has since been associated; *the frequency of the heart beat is inversely proportional to the blood pressure.*

In 1863 Marey published the first of his important works on the graphic method in the study of the physiology of the heart and the circulation.[31] In it he told of Chauveau's contribution to the experimental evidence for Marey's Law:

"Chauveau has been kind enough to communicate the results of an experiment he has devised to verify the theory we proposed with regard to the effect the compression of large arterial trunks exerts on the frequency of the heart beats. The result of this experiment furnishes, as will be seen, a new confirmation of our theory.

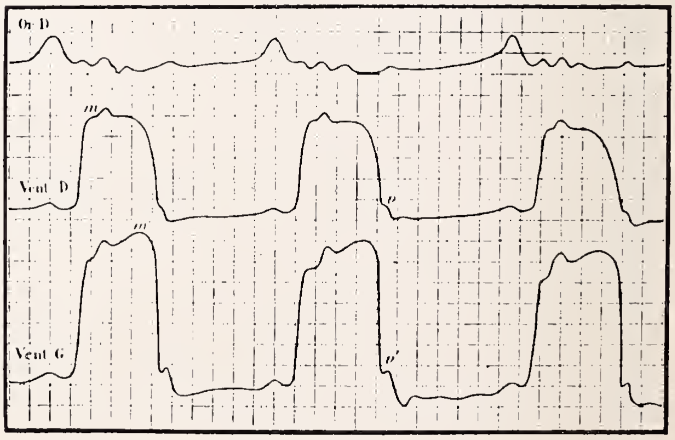

Figure III

Simultaneous recordings of right atrial (Or D), right ventricular (Vent D) and left ventricular (Vent G) pressures, made by Marey and Chauveau. (From ref. 34, fig. 10).

"In large animals like the horse it is easy to introduce the hand into the rectum and insert it deeply. One can then feel the aorta before its bifurcation, and, across the walls of the intestine, seize this vessel and compress it. After having applied a sphygmoscope to the carotid of a horse, and having started the instrument going, Chauveau compressed the aorta in this way. At once the instrument indicated a very considerable augmentation in the arterial pressure and a considerable slowing in the heartbeats.

"The pulse beat at about 50 beats a minute before the compression of the aorta; at the moment of compression it beat only about twenty-five times.

"There is no need to comment on this experiment; it shows clearly the existence of the influence we have called attention to in the case of compression of the aorta."

A few years later Ludwig and von Cyon noted the fall in blood pressure and heart rate that follows the stimulation of the depressor nerve, that in the rabbit supplies the receptors of the arch of the aorta, and at almost the same time Czermak reported on the slowing in his own heart beat when he palpated his own carotid artery, especially where he was able to feel a round pulsating swelling. This observation, which Hering began to study in 1905, finally culminated in the discovery of the carotid sinus reflex which affords the physiological explanation for the operation of Marey's Law.[35]

Catheterization Of The Ventricles In The Horse

In the experiment carried out by the authors, anesthetized horses were employed. A catheter, made from a length of 1/4" i.d. Tygon tubing, was passed down the right external jugular vein while pressure was being recorded. The catheter was easily introduced into the right atrium, right ventricle and, on one occasion, by virtue of the large outflow from the right ventricle, passed into the pulmonary artery, making it possible to record this pressure. The left heart was catheterized by passing a similar catheter, stiffened with a wire, down the left carotid artery across the arch of the aorta and into the left ventricle as the aortic valve opened during systole.

A record showing the simultaneously recorded electrocardiogram with left and right ventricular pressures is found in Figure IV. The left ventricular was 160/0 and that in the right was 80/0. In some of the experiments, ventricular diastolic pressures below atmospheric were recorded, as would be expected from the subatmospheric pressures in the thorax. In most records it was possible to identify a small pressure pulse before ventricular systole which was most likely caused by the atrial contribution to the filling of the ventricles. Near the center of the record, the right ventricular catheter was advanced from this chamber into the pulmonary artery. When the catheter entered the pulmonary artery the pressure changed from 80/5 to 70/30 demonstrating a systolic gradient of approximately 10 mm. Hg driving blood into the pulmonary circuit. The record also demonstrates the action of the pulmonic valve to sustain a diastolic pressure of approximately 35 mm. Hg.

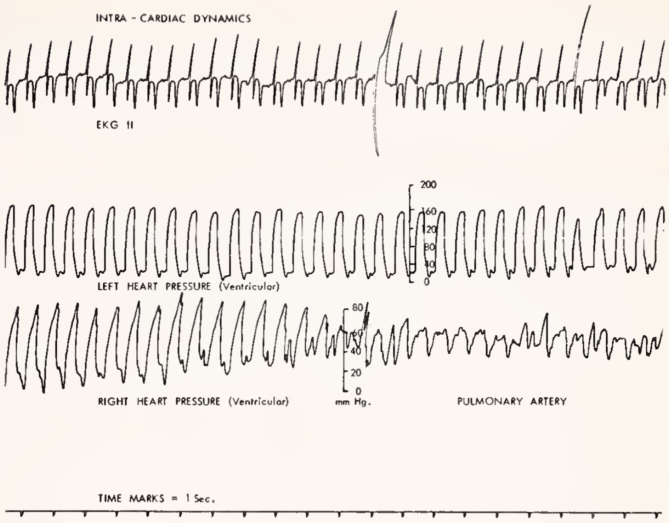

FIGURE IV

The electrocardiogram with left and right ventricular pressures in the anesthetized horse. Two ventricular ectopic beats are observed, presumably arising from stimulation of the apex and base of the heart by manipulating the right ventricular catheter to enter the pulmonary artery.

Occasionally the catheter tip acted as a mechanical stimulus and induced an extrasystole. Near the middle of the record, just before a normal beat occurred, the catheter stimulated the apex of the ventricle to produce an extrasystole. Its apical origin is verified by the inverted QS wave and the upright T. A second extrasystole, presumably originating at the base is shown near the right hand side of the illustration. Because of either the prematurity of the beat, which compromised filling, or because the conduction path was aberrant, the force of the extrasystole was somewhat less than that of the normal beat. Such demonstrations dramatically indicate the lack of relationship between the amplitude of the R wave of the electrocardiogram and the force of ventricular systole.

Vagal Stimulation

Because an adequate demonstration of the Chauveau-Marey maneuver, to be described in the following section, requires the participation of functioning vagus nerves, their stimulation was attempted. Sleeve electrodes were placed around the right and left vagus nerves of each animal and connected to a Physiograph rectangular-wave stimulator. Various combinations of voltage, duration,

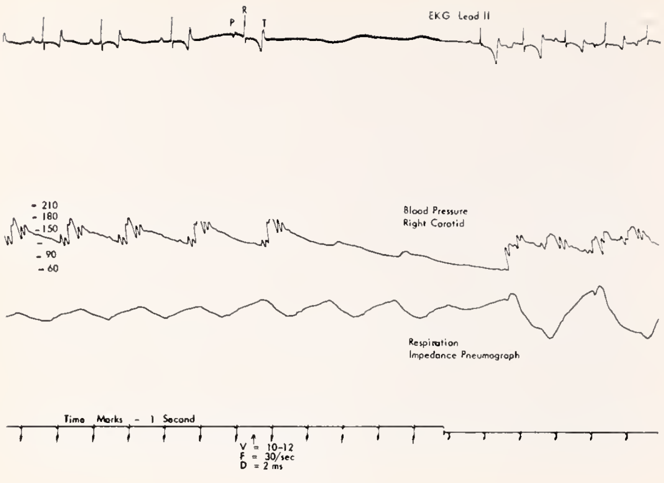

FIGURE V

The electrocardiogram, blood pressure and respiration in the anesthetized horse during right vagal stimulation. Note the prolongation of the P-R interval, R and T wave changes, momentary cardiac arrest, and fall in blood pressure.

and frequency were applied to attempt to slow the heart.

Both vagi proved to be only moderately responsive in the three tranquilized animals, while they were more responsive in the non-tranquilized horses. A slowing of the heart was obtained in most of the animals with right vagal stimulation and varying degrees of atrioventricular block were obtained with left vagal stimulation. Simple pacemaker slowing with conspicuous alterations in the QRS-T complex is illustrated in Figure V. Total A-V block is shown in the center of Figure VI followed by 2:1 A-V block.

The Chauveau-Marey Maneuver

The technique consisted of inserting the hand and arm through the anus and passing it up the large intestine until to the level of the kidneys, which were easy to locate by palpation through the intestinal wall. Between them was felt the large descending aorta which pulsated strongly with each heart beat. The aorta was then firmly pressed against the spinal column. This act greatly increased the peripheral resistance facing the heart, and produced an instant rise in blood pressure is signalled centrally via the various pressoreceptors. Then reflex lowering of blood pressure occurred, brought about a slowing of the heart via increased vagal outflow and a decrease in peripheral resistance by inhibition of sympathetic outflow, which, as the occlusion was maintained, tended to bring blood pressure back to control levels. During this period, however, anoxic and other changes in the tissues distal to the occlusion, caused the vessels in these areas to dilate; in addition they shared in the generalized reflex vasodilatation. In consequence, when the occlusion was removed the blood found an enlarged reservoir to fill and the pressure dropped considerably. Cardiovascular reflexes again come into play to restore blood pressure via cardiac acceleration and an increase in peripheral resistance.

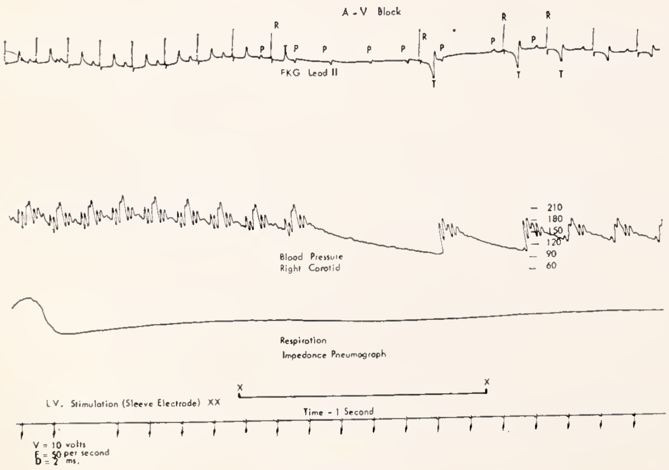

FIGURE VI

The electrocardiogram, carotid blood pressure and respiration in the anesthetized horse. The record, made during left vagal stimulation, illustrates total and 2:1 A-V block.

This spectrum of events is shown in Figure VII. At the time indicated on the record, the descending aorta of one of the untranquilized anesthetized

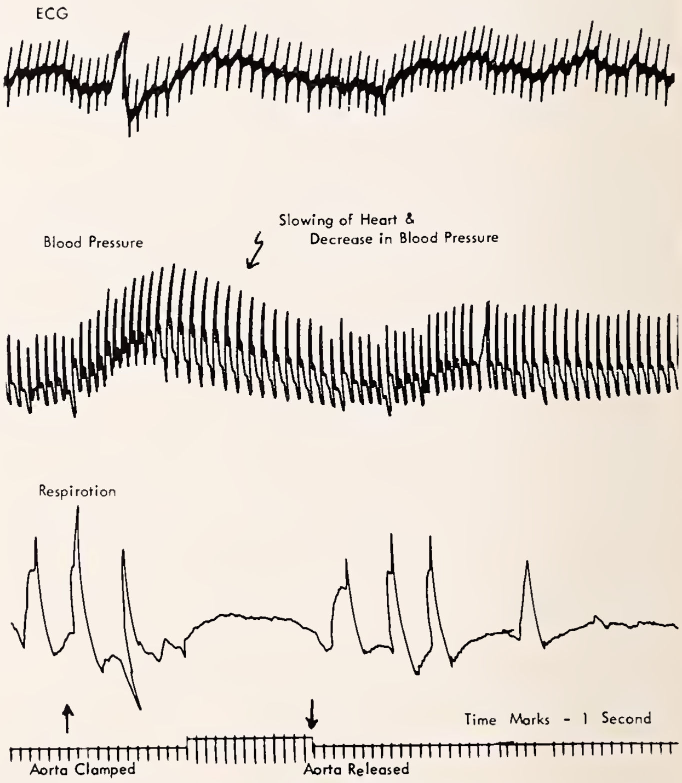

FIGURE VII

The electrocardiogram, carotid blood pressure and respiration during the Chauveau-Marey maneuver of compression of the descending aorta. Note the rise in blood pressure and reflex slowing of the heart (Marey's Law). After removal of the occlusion, note the reflex increase in heart rate followed by a second slowing as the blood pressure rises again.

animals was occluded, and within a few beats the blood pressure mounted, A few seconds later the heart slowed by 30 per cent. At the mark on the record, the occlusion was removed, the blood pressure dropped markedly and the heart immediately increased in rate. As the blood pressure mounted, the carotid sinus reflex again came into action.

These recordings, while demonstrating the phenomena, appear not to be as dramatic as those described by Marey and Chauveau. It must be remembered, however, that they performed the experiment in the unanesthetized horse. Depression of the reflex by the anesthesia is the probable explanation for the moderate response to this considerable stimulus to the cardiovascular system.

Conclusion

It is not difficult to see why Magendie and Bernard chose the horse for their first experiments on the temperature of mixed venous and aterial blood; its large vessels permitted passage of the stout glass-walled thermometers that alone were available when they started their work, while the commodious vessels and the forward location of the heart in the thorax made it possible to employ these straight and rigid instruments because of the more direct passage and the possibility afforded by the greater diameter to negotiate such bends as did exist. Not unimportant was the horse's willingness to stand patiently under the pain and discomfort of the surgical approach and the procedure itself. Later, as anesthetics and analgesias became available and as slender flexible catheters carrying thermocouples became available, Bernard had recourse to the dog and the horse was no longer necessary.

These same considerations must also have been important to Chauveau and Marey, but another factor may have been more critical; the relatively slow rate of the heart beat in the horse. The pneumatic devices they used to pick up and transmit intracavity pressures, along with the mechanical levers operated by the pneumatic tambours to write out the final record must have had a slow response-time, which would have made it extremely difficult to obtain an interpretable record in the dog or smaller mammal. The slower heart of the horse in large measure compensated, therefore, for the inadequacies of the recording system and removed the doubts that must have arisen as to the accuracy of the results as they were recorded.

It is possible also to understand something of the tremendous impact Lavoisier's chemistry has had on medicine from reviewing here some of the developments that followed a single aspect of his fundamental analysis of the nature of oxygen and its role in combustion. A single suggestion, never more than tentatively proposed, that bodily oxidations might take place principally in the lungs, stimulated a chain of experiments that produced the procedure of cardiac catheterization in the hands of Magendie and Bernard, and its adaptation to cardiac dynamics by Chauveau and Marey. All modern employment of the technique are basically founded on these experiments, on Lavoisier's other suggestion of the blood as simply the transport for oxygen and carbon dioxide, and Bernard's localization of metabolic activity in all the organs and tissues of the body, through the activity of the individual cells of which they are constituted.

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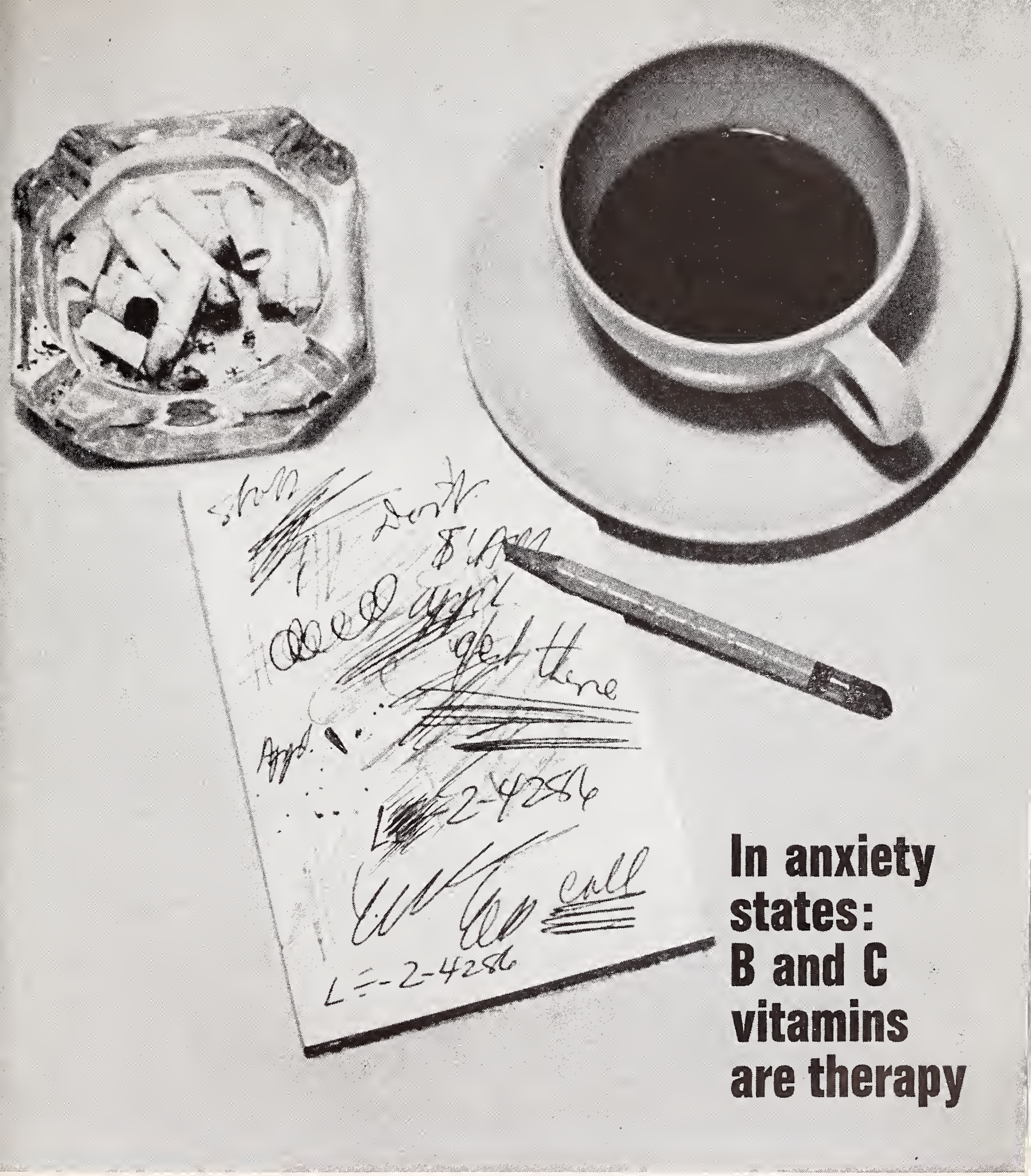
(*This is the second of a series of four articles.*)

ACCIDENTS LESSENED BY AUTOMATION

The records of Ford of America for 1954 show that on the cylinder block machining operations, which were most significantly affected by automation, the frequency of accidents decreased by 60 per cent from 1950. In Britain in 1954 about 22 out of every 1,000 people employed in factories were killed or injured, yet in 1937 the figure was about 30. It may be safely assumed that mechanization has continuously progressed between 1937 and 1954, and that the 25 per cent fall in accidents can be attributed at least in good part to mechanization. By far the largest number of accidents occurs in the handling of goods or articles and in the use of power-driven machinery. All these activities will be eliminated or considerably reduced with the advent of automation. Even though the risk of accidents is thus lessened, management must be ever alert in making the fullest use of automatic techniques to bring down the number of accidents as far as possible.— Goodman, L. I.: *Man and Automation,* Baltimore: Penguin Books, 1957, p. 166.



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Vitamin B_6 (Pyridoxine HCl)	2 mg.
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THE PRESIDENT'S PAGE

The University Of Connecticut School Of Medicine

Almost five years have passed since the Site Commission to select a location for the construction of the University of Connecticut's Schools of Medicine and Dentistry chose a nicely elevated and treed area in Farmington, a suburb of Hartford. Shortly thereafter, a Committee was selected to choose a dean for each school and architectural plans have been completed and accepted by the trustees of the University. Construction is expected to get under way next spring and it is hoped that the first class will be admitted in September 1968 and graduate in 1972. The school will have its own hospital which is expected to be able to receive patients about 1969.

With a steady increase in the population in this area, the new school will help a great deal in alleviating the shortage of physicians here and throughout Connecticut as well as in the nation. Even with the fourteen new schools in different phases of construction, no adequate supply of American trained physicians will be available for years to come.

Dean Lewis Fox of the Dental School and Dean John Patterson of the School of Medicine, together with their associate deans, are doing an excellent job of planning this formidable undertaking. Through a voluntary organization known as "The Friends of the School of Dental Medicine," Dean Fox receives substantial financial aid to accomplish many small but necessary projects not included in the usual budget. It seems appropriate that a similar group of physicians should get together for a like purpose to aid Dean Patterson carry out the many projects he has to face in the future.

Since the University Medical School will have a strong interest in the health of citizens from all over the state and will try to help physicians in many ways, it would be proper for the physicians of the state to indicate on their contributions to AMAERF that they desire their annual gift to go to our new University Medical School. This is one way physicians can express their support for the new educational institution now rising near Hartford.

All such seats of medical learning contribute greatly in making the lives of our citizens healthier and thereby make the state in which they function a better place to live. This writer is sure that Connecticut physicians will help in every way possible to make the new medical school the best one in the land.

James R. Cullen, M.D.

FROM THE GENERAL MANAGER'S OFFICE

William R. Richards, m.d., *General Manager*
160 St. Ronan Street, New Haven, Conn.
Telephone 865 0587

James G. Burch
Director of Public Relations

Josephine P. Lindquist
Assistant to General Manager

SUMMARY OF ACTIONS COUNCIL MEETING

Wednesday, November 17, 1965

I. Attendance

Present in addition to the Chairman, Dr. S. J. Martin, were: Drs. Cullen, Hess, Bradley, W. Martin, Weise, Sr., M. Caplan, Gardner, Brandon, Pitock, Rogol, Grendon, Egan, H. Caplan, Spitz, Shepard, Ayres, Nolan, Cramer, Fabro, Abbot, Petrie, Wilson, Hastings, and Roch. Also present were: Mrs. Lindquist, Mr. Burch, Mr. Chilcoat (AMA) and Dr. Richards. Absent were: Drs. Goldberg, Davis, Hughes Epstein and Ciccarelli.

Joining the Council during the meeting were: Drs. K. Pelz and I. Friedberg (Committee on Aging); Dr. L. Celentano (Public Relations Division).

II. Routine Business

Approval Of Minutes

As printed and distributed, it was VOTED to approve the minutes of the meeting of October 17, 1965.

Life Memberships

It was VOTED to approve applications for Life Membership of the following eligible Active Members of the Society:

C. Leo Delohery, Danbury (FCMA)—Effective 1966

Henry J. Giarmarino, New Haven (NHCMA)—Effective 1965

Robert P. Rogers, Greenwich (FCMA)—Effective 1966

CSMS Dues Exemptions

It was VOTED to approve requests for exemption from payment of CSMS membership dues as follows:

Paul M. Sherwood, Hartford (HCMA)—beginning July 1, 1965 through June 30, 1966 (residency training)

John Hughes, Somers (TCMA)—1966 (postgraduate education)

John Pfiffer, Rockville (TCMA)—1966 (postgraduate education).

Election Of Student Members

It was VOTED to elect 42 Connecticut residents, who are attending schools of medicine, to Student Membership in the Society. The names of the new Student Members will be published in the Journal.

Committee Resignations, Appointments, Etc.

Advisory Committee to the State Commissioners of Welfare, Finance and Control: It was VOTED to accept, with regret, the resignation of J. Harold Root, Sr., Watertown, as a member of this Committee. It was further VOTED to appoint Clifford Joseph, Torrington, to replace Dr. Root on the Committee and complete his unexpired term.

Council Committee on Medicine and Religion: James R Cullen, Hartford, announced that he desired to be relieved of the Chairmanship of this Committee, and it was VOTED to accept his resignation with regret. It was further VOTED to request Francis W. Helfrick, Hartford, to accept the Chairmanship of the Committee to replace Dr. Cullen.

Request—Advisory Council Of Connecticut Licensed Practical Nurse Association

Acting on a request of the CLPNA that the Council nominate one or more members for appointment for service with that Association's Advisory Council (two year term), it was VOTED to submit the name of David Poverman, New Haven, for favorable consideration. In the event that additional nominations are needed, it was VOTED to authorize the Chairman to make same on request.

Report—CSMS Representative To Health Careers Conference

It was VOTED to accept, with commendation, the report filed by Bernard F. Mann, Jr., New Haven, on the proceedings of the National Conference on Health Careers, Detroit, September 22-24. Dr. Mann is Chairman of the CSMS Committee on Health Careers, and participated in the Conference as a representative of the Society.

Report—CSMS Representative To Conference On Disaster Medical Care

It was VOTED to accept, with commendation, and to publish in Connecticut Medicine, the report filed by John Shoukimas, Hartford, on the proceedings of this Conference (sponsored by AMA), Washington, D.C., August 7-8. Dr. Shoukimas is Chairman of the CSMS Committee on Disaster Medical Care, and attended the Conference as a representative of the Society.

Date Of Next Meeting

The Chairman was authorized to call a meeting of the Council at 12:00-1:00 P.M. on Thursday, December 9 (prior to the House of Delegates meeting at 2:00 P.M.), should there be any special business to act upon and transmit to the House on that day. If not, the next meeting will be called by the Chairman on an appropriate future Thursday.

III. Old, New And Special Business

Report And Request—Committee On Aging

It was VOTED to receive as information a report filed by Kurt Pelz, Wallingford, on the proceedings of the Conference for Improvement of Care for the Elderly, Boston, September 8-9. Dr. Pelz is Chairman of the CSMS Committee on Aging, and attended the Conference as a representative of the Society.

At 3:30 P.M., the Council members were joined by Dr. Pelz and by Isadore H. Friedberg, Newington, a member of the Committee on Aging. The two representatives of the Committee presented certain problems which exist in the operation of extended-care facilities (nursing homes, etc.) and stated that these problems were bound to be magnified when the Medicare Law is implemented (starting July, 1966) and that the Society should assume leadership in dealing with these problems and preparing to meet the increased burdens which extended-care facilities and their medical and paramedical personnel will be called on to bear in the years to come.

After exchanging pertinent ideas and information with Drs. Pelz and Friedberg, the Council VOTED to take actions in these matters as follows:

(1) To endorse in principle:

- (a) The advancement of uniform accreditation programs for extended-care facilities.
- (b) The development of programs to improve the quality of medical care in such facilities.
- (c) The development of a program, sponsored by CSMS and/or county and local medical associations, to provide utilization review committees for extended-care facilities.
- (d) The taking of immediate steps to plan and implement training programs to alleviate shortages of skilled and semi-skilled personnel, and thereby increase the ability of extended-care facilities to provide high quality services for the aged and chronically infirm.
- (e) The development and implementation of programs of education for medical and paramedical personnel as to the general and special needs of the aged and chronically infirm.

(2) To authorize the Committee on Aging to include in, and expand, its activities in the study of extended-care facilities, to establish formal liaison with representatives of such facilities in Connecticut, and to take steps and make recommendations to the Council which will promote effective implementation of the principles endorsed above under (1).

Special Report On Utilization Review—Committee On Hospitals

Having conferred at length with Commissioner Franklin M. Foote of the State Health Department, and having reviewed the Medicare Law and pertinent information received from national and local professional sources, the Committee on Hospitals filed a special report on: "Utilization Review Committees Under Part A of P.L. 89-97 (Medicare)" and recommended approval of a series of "statements of policy" concerning same.

It was VOTED to approve the report and the recommended statements of policy contained therein, to publish the report in the Journal, and to distribute copies of same to the Commissioner of Health and to the chiefs of staff and administrators of all general community hospitals in Connecticut.

Commissioner Foote had been invited to join the Council at this meeting to discuss the certification of hospitals and related facilities for participation in Part A of the Medicare Law, but was unable to attend because of other commitments. In a letter to the General Manager, he expressed his regrets and a desire to be invited to attend a subsequent Council meeting.

Progress Report—1965 MAA (Kerr-Mills) Amendments

The Chairman, S. J. Martin, reported on his pursuance with Governor Dempsey of the 1965 MAA amendments which deleted the provision for MAA beneficiaries to receive in-hospital care from their personal physicians after October 1, 1965. Dr. Martin stated that the Governor is vitally interested in this matter and that a meeting has been arranged for November 24 at which Commissioner of Welfare Shapiro and his staff will discuss the question with him and other representatives of the Society. It was VOTED to accept this report as information.

Communication—HCMA Board Of Directors

Addressed to the Chairman of the Council, a November 4 letter from Dr. Charles Polivy, President of HCMA, informs the Council that the HCMA Board of Directors "urges you (the Council) to reopen the question of establishing some liaison and, if possible, some cooperation in those activities which are of joint benefit between the Connecticut State Medical Society and Connecticut Medical Service, Inc." Dr. Polivy states that: ". . . we voted not to make an official submission (of a candidate for possible election to the CMS Medical Advisory Committee) to the executive office of CMS" but "we are at a loss to understand how the State Medical Society and the members thereof could benefit from lack of liaison or some element of voting control at a time when it is clear-cut that medicine will be changed and is changing in a rather rapid fashion." Dr. Polivy also submitted a copy of a letter to William H. Horton, M.D., Executive Dirtctor of CMS, urging that the CMS Board of Directors seriously consider initiating similar steps to reestablish liaison with the Society.

After considerable discussion, it was VOTED to make a reply to the HCMA Board of Directors which embodies the following:

(a) Notification of the action taken by the Council with regard to the National Association of Blue Shield Plans and the Department of HEW.

(b) Reaffirmation of the fact that the 1964 parting of the ways between CSMS and CMS, Inc. was brought about almost entirely by an apparently unresolvable disagreement on the "element of voting control"; but that, however, the Society remains agreeable and receptive to communication from CMS, Inc. concerning any "activities which are of joint benefit" to the two organizations.

Proposal—Committee To Study Perinatal Morbidity And Mortality

In a detailed report which included cost estimates, Samuel D. Rowley, Chairman of the Committee, presented a proposal to hold a one-day seminar on "Perinatal Problems" at an estimated cost of $2,705, the proposed date of the seminar being November 16, 1966. The proposal elicited much favorable comment from members of the Council, and it was VOTED to approve the project *in principle.* As to financing the seminar entirely out of CSMS membership dues, grave doubt was expressed that such an expenditure could be fitted into the budget for 1966, and it was therefore VOTED to urge Dr. Rowley to seek co-sponsors and co-financing for the seminar, it being understood that the Council would be receptive to a request for the Society to underwrite some nominal part of the costs. It was further VOTED to reimburse Dr. Rowley in the amount of $26.50 for out-of-pocket expenses incurred by him in connection with planning for the seminar.

Request—Formation Of A CSMS Section On Pediatrics

Having received from the president of the Hezekiah Beardsley Pediatric Club a list of pro tem members (of CSMS), a list of pro tem officers, and a set of proposed bylaws, it was VOTED to approve these documents as the basis for the formation of a CSMS Section on Pediatrics, and to recommend to the House of Delegates on December 9, 1965, that a Section on Pediatrics be authorized.

Request—Formation Of A Section On General Practice

Having received from the president of the Connecticut Academy of General Practice a list of pro tem members (of CSMS), a list of pro tem officers, and a set of proposed bylaws, it was VOTED to approve these documents (subject to changes in one section of the proposed bylaws) as the basis for the formation of a CSMS Section on General Practice, and to recommend to the House of Delegates on December 9, 1965, that a Section on General Practice be authorized.

The change in the proposed bylaws referred to above, is that Article III, Section shall read: "Active membership shall be limited to members in good standing of the Connecticut State Medical Society. The privilege of holding office and voting shall be limited to active members."

Authorization by the House of Delegates will be contingent upon notification by the members requesting same that this change meets with their approval.

Special Report—Committee On Postgraduate Education

As requested by the Council (1/20/65), the Committee filed a special report on its experience (financial and otherwise) with holding sessions of the Clinical Congress in recent years. In brief, the report states that the Committee finds the Clinical Congress to be a worthwhile vehicle for furthering the purposes of the Society in the field of education; that commercial exhibits, advertising, etc. would detract from the educational role of the Congress; and that, in the Committee's opinion, the Society should continue to underwrite the costs of the Clinical Congress—in toto, if necessary. A specific recommendation was made that $1500 be appropriated to cover estimated costs of the 1966 session, already authorized by the Council.

After some discussion, it was VOTED to accept the report of the Committee (including the recommended appropriation for 1966) but to urge the

Committee to pursue the possibility of obtaining co-sponsors (and co-financing) for future Clinical Congresses from outside sources, including commercial.

Report And Recommendations—PR Division

Luca E. H. Celentano, Chairman of the PR Division, joined the Council at this meeting to enlarge upon a report and recommendations of the Division which had been submitted in printed form. Calling for an expanded program of communications especially in the areas of press, radio and television, the report made two recommendations regarding the hiring of additional PR personnel, and one recommendation concerning annual compensation of the PR Director.

Expressing appreciation to Dr. Celentano for coming to the meeting, and general interest in the Division's recommendations, it was VOTED to receive the report as information. With respect to the recommendations concerning the hiring of additional personnel, the Council assured the PR Divisional Chairman that it would be receptive to more specific proposals of this nature which included the details of assignment, cost estimates, etc.

Progress Report—CSMS Participation In CHA "Hospital Planning Commission"

Drs. Cullen and S. J. Martin reported that, as directed by the Council, an ad hoc committee of the Society had met with similar representatives of the CHA's Steering Committee for the formation of a "Connecticut Hospital and Related Health Facilities Planning Commission" to discuss the terms on which the Society had been invited to participate in the Commission, especially as to the nominating of CSMS members to serve with the Commission representing medical practice.

Describing the liaison meeting as "cordial and productive," and referring to "informal minutes" of the meeting (furnished by CHA), Drs. Cullen and Martin suggested that the Council nominate 10-12 members of the Society from which the CHA Trustees could make an initial appointment of six physicians to membership on the Commission.

After considerable discussion, it was VOTED to nominate six members of the Society for appointment as Commission members by the CHA Board of Trustees. The motion was carried by a vote of 18-6, with the following members requesting to be recorded as voting "no": Drs. H. Caplan, M. Caplan, Pitock, Hastings, Petrie and Shepard. It was further VOTED that the President, the Chairman of the Council, and the Chairman of the Committee on Hospitals be authorized to nominate the six members of the Society called for in the previous action.

Pursuant to the same general subject, it was further VOTED to recommend to each of the constituent county medical associations that it consider establishing a hospital planning committee composed entirely of physician members.

Report—Ad Hoc Committee On Corporate Practice Of Medicine

As requested by the Council, the Ad Hoc Committee has studied the following resolution adopted at the June, 1965 meeting of the AMA House of Delegates:

"Resolved: That this House of Delegates reaffirm the policy previously established by the American Medical Association concerning the practice of radiology, pathology, anesthesiology and physical medicine in relation to hospitals, and be it further

Resolved: That these specialty groups be strongly encouraged to effect these principles for their members."

It was VOTED to approve the report of the Ad Hoc Committee on this resolution as follows: "Since this resolution is merely a reaffirmation of positions previously taken by the AMA and endorsed by the Connecticut State Medical Society, the Committee recommends that the Council support (the intent of) the resolution."

Resolution—Separate Billing For Services Of Hospital-Based Specialists

Introduced by David A. Grendon, Sharon, Councilor from LCMA, it was VOTED to approve a resolution, and transmit same to the House of Delegates on December 9, as follows:

"Resolved: That the Council recommend to the House of Delegates, at its semi-annual meeting on December 9, 1965, that the Connecticut State Medical Society support the principle of separate billing for the professional services of practitioners of the hospital-based specialties (radiology, pathology, anesthesiology and physical medicine."

Report—Committee On Hospitals

It was VOTED to approve a report of the Committee on Hospitals as follows: Having reviewed the document titled: 'The Medicare Law—P.L. 89-97, An Assessment of Its Professional Implications,' the Committee recommends that the General Manager be commended for his work in preparing the article. The Committee believes that the publication of this article for the information of physicians in Connecticut will serve a most useful purpose.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on November 17, 1965. Detailed minutes of the meeting are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

PLACEMENT OPPORTUNITIES

PHYSICIAN AND INTERNIST for Chronic Disease, Cancer and Tuberculosis Hospital. Must have a Connecticut license and Board eligibility or equivalent experience. Salary range $13,420 to $17,600. Three bedroom, two bath apartment available with maintenance at minimal cost. Liberal fringe benefits and insurance. Reply to Uncas-On-Thames Hospital, Norwich, Connecticut.

OCCUPATIONAL PHYSICIAN for state ememployees' clinic located in Hartford, 35 hour week, 3 weeks vacation, up to 120 days sick leave, paid insurance program, social security and liberal benefits for retirement. Requires at least two years' general practice. Starting salary $12,040 going up to $13,000 at the end of first year, then advancing $560 annually to maximum of $15,080. Reply directly to B. Dearington, Connecticut State Department of Health, 79 Elm Street, Hartford, Connecticut. EQUAL OPPORTUNITY EMPLOYER.

OBS.-GYN. — Board certified or Board eligible Obs.-Gyn. to serve 65 beds, fully accredited, licensed Maternity Department in a rural hospital which takes cares of two communities of about 40,000 total population.

INTERNIST for expanding medical group who have just recently occupied newly constructed building close to large university medical center. Call or write Chapel Medical Group, 1308 Chapel Street, New Haven, Connecticut 06511.

WANTED—A young practitioner trained in General Medicine and Pediatrics to share a fully established practice. Two fully accredited hospitals totalling over 700 beds serve the area. Address inquiries to: P. O. Box 469, Woodbury, Connecticut.

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ANYONE INTERESTED IN THE ABOVE IS ASKED TO COMMUNICATE WITH THE GENERAL MANAGER'S OFFICE, 160 ST. RONAN STREET, NEW HAVEN.

1966 MEETINGS

April 26-28—174th Annual Meeting of the Connecticut State Medical Society to be held at the Statler-Hilton Hotel, Hartford, Connecticut.

PLACEMENT WANTED

GENERAL SURGEON — Board certified, 36 years of age, Connecticut license. Military obligations completed. Available immediately, interested in group or associate practice.

GENERAL SURGEON — Board eligible, excellent background in surgery, with sub-specialty in neo-plastic surgery. Available immediately, with willingness to go into General Practice, as well as surgical practice. Military obligations completed.

OBS.-GYN.—Board eligible, Connecticut license. Military obligations recently completed. Would like to practice with either group or partner. Immediately available, with interest in the Greater Hartford area.

OBS.-GYN.—33 years of age, Board eligible, military obligations completed. Interested primarily in an association with another Obs.-Gyn. Available as of January 1.

INTERNIST—Board certified, interested in relocating in Connecticut in a comparatively large community with either a group or partner. Military obligations completed, available within a very short time.

INTERNIST — 35 years of age, Board eligible, Connecticut license. Subspecialty training in Gastroenterology, Endoscopy, Small Intestinal Biopsy. Wishes to associate with established physician or medical group.

NEW MEMBERS

Litchfield County
- Wilburta Daltroff, Sherman
- Joseph J. Danis, Lakeville
- Joseph F. Palma, Sharon

Middlesex County
- Richard P. Johnson, Rocky Hill
- Myron Moskowitz, Middletown
- Howard Rosenbaum, Middletown
- Jack Sheps, Middletown

New Haven County
- Marvin Albert, Meriden
- Marvin S. Arons, New Haven
- Morton Bender, West Haven
- Irwin B. Bernhardt, Meriden
- John C. Daniels, New Haven
- Harold O. Douglass, Jr., Meriden
- John C. Dower, New Haven
- Lewis C. Downing, New Haven
- Richard S. Dutton, New Haven
- Austin V. Errico, New Haven
- Desmond A. FitzGerald, New Haven
- Edward H. Hon, New Haven

David A. Hilding, New Haven
Peter B. Hukill, New Haven
Luke M. Kitahata, New Haven
Hsing C. Loh, West Haven
Ian C. MacLean, Wallingford
Robert N. Margolis, New Haven
John B. McKee, Jr., New Haven
Darius G. Ornston, Jr., New Haven
Irving M. Polayes, New Haven
Boris G. Rifkin, New Haven
Eugene R. Rightmyer, New Haven
James W. Rowe, New Haven
Ronald C. Savin, New Haven
Carlos Semprini, New Haven
Stanley Stern, New Haven
Eiji Yanagisawa, New Haven

New London County
Grace D. Ellis, Waterford
Beverly A. Foss, New London

Tolland County
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Letter To The Editor

Dear Doctor Nahum:

I enclose a copy of the Connecticut Society for Medical Research newsletter, which describes the society's program of education and public relations. I request that it be published as a communication to Connecticut Medicine.

Sincerely yours,
Michael Hume, m.d.

Newsletter — Fall, 1965

Report From The President

CSMR has completed another year of service to the people of Connecticut. We are more convinced than ever that no one is unaffected by the progress of medical research in this state, nor is anyone really indifferent to the problems that it encounters. The accomplishments of our society as outlined below need to be expanded, but another need is obvious. More people should share our work, dedicated as it is to improving medical research in the state and to a better public understanding of its aims, needs and achievements. Membership in the society is a way of keeping up with this, and you are urged to interest your neighbors, your family, your friends and your colleagues in our organization. A member ship application blank appears on the back page and may be clipped and returned in an envelope addressed to CSMR. Remember, medical research needs well-informed friends. Misguided propaganda could be neutralized by education.

Thank you,
Roy N. Barnett, m.d.

Junior Science And Humanities Symposium

Dr. Thomas C. Ferris arranged for CSMR to participate in this year's Junior Science and Humanities Symposium held at Yale University. This symposium, which is supported by the Olin Mathieson Company and the Department of the Army, was attended by 250 high school honor students and school science teachers. On the 1st day of the meeting, a general assembly was held in the Mary Harkness Auditorium. At the third session, Dr. Robert J. Lifton, Associate Professor of Psychiatry at Yale University presented the topic "The Psychological Effects of the Atom Bomb in Hiroshima," which was concerned with Communist Chinese attitude-training centers, otherwise known as brain-washing. Interest was high amog the audience in this revealing presentation by an American psychiatrist based on interviews with refugees from China who reached the city of Hong Kong.

High School Science Project Awards

In response to CSMR announcement, 6 science project reports were submitted by school science teachers about the state. CSMR judges were assisted by members of the Connecticut Science Teachers Association, by E. Dan Cappel, Biology Editor of the *Connecticut Journal of Science Teaching,* and members of the Yale Faculty, including Dr. Alvin Novick, Dr. Paul Calabresi, Dr. F. Patrick McKegney, Jr., and Dr. Alvin Brodish. First award was made to Walter Peidl, a Southington High School senior, for his report "Endogenous and Exogenous Hormone Interrelations Across the Parabiotic Barrier of C57B1/6J Mice." This project was carried out under the guidance of Nellie F. Shepard, Chairman of Science at Southington High School. Honorable mention went to Kevin Duran Munn of Widsor Locks High School for his paper "Alcoholism-Neurosis: A Symbiotic Acquaintance." His Science Teacher was Edward Luke. Citations were also read at the medical research forum by President Barnett for the following other science projects:

Meryam Batas, Central High School, Bridgeport
Teacher: Albert Fleisher
Title of paper: "Surgical Lasers'

Kenneth Goloski, St. Joseph High School, North Grosvenordale
Teacher: Sister Mary Hector, C.S.C.
Title of paper: "Experimental Mice in Project Mercury"

Alice Reid, Joel Barlow High School, Redding
Teacher: Grace McDonald
Title of paper: "Desoxyribose Nucleic Acid"

Stanley Scordilis, Andrew Warde High School, Fairfield
Teacher: Raymond Condren
Title of paper: "The Motive Force of Streaming in *Physarum polycephalum*"

Genetics Centenary

In honor of the centenary anniversary of publication of Gregor Mendel's epochal discovery which provided a foundation for the science of genetics, the CSMR distributed a text and laboratory exercise to 90 science teachers throughout the state who responded to an announcement mailed last fall. The text was prepared by Professor William R. O'Brien of the Department of Epidemiology and Public Health, Yale University School of Medicine. Included in this text were a historical survey of Mendel's life and work, illustrated with projection slides, which included a portrait of the investigator, the pea garden in which he worked, a diagram of his original experiment, and the most important mathematical adaptation made since his time—the Hardy-Weinberg equation. The text contains many examples of the application of the mathematical model to population genetics, and concludes with a classroom exercise based on the genetically determined ability of individuals to taste a certain test substance—phenylthiourea-phenylthiocarbamide (P. T. C.). Distributed with the text and slides was sufficient taste-test paper to permit all the students in the science class to carry out the testing procedure on themselves and on members of their immediate family. The collection of the data and the application of the mathematical formula are described in the exercise. Plans are being considered for further collection from as many of the science classes as possible to provide validation of the data on a much larger scale. For his work in preparing this text, Dr. O'Brien was cited by CSMR.

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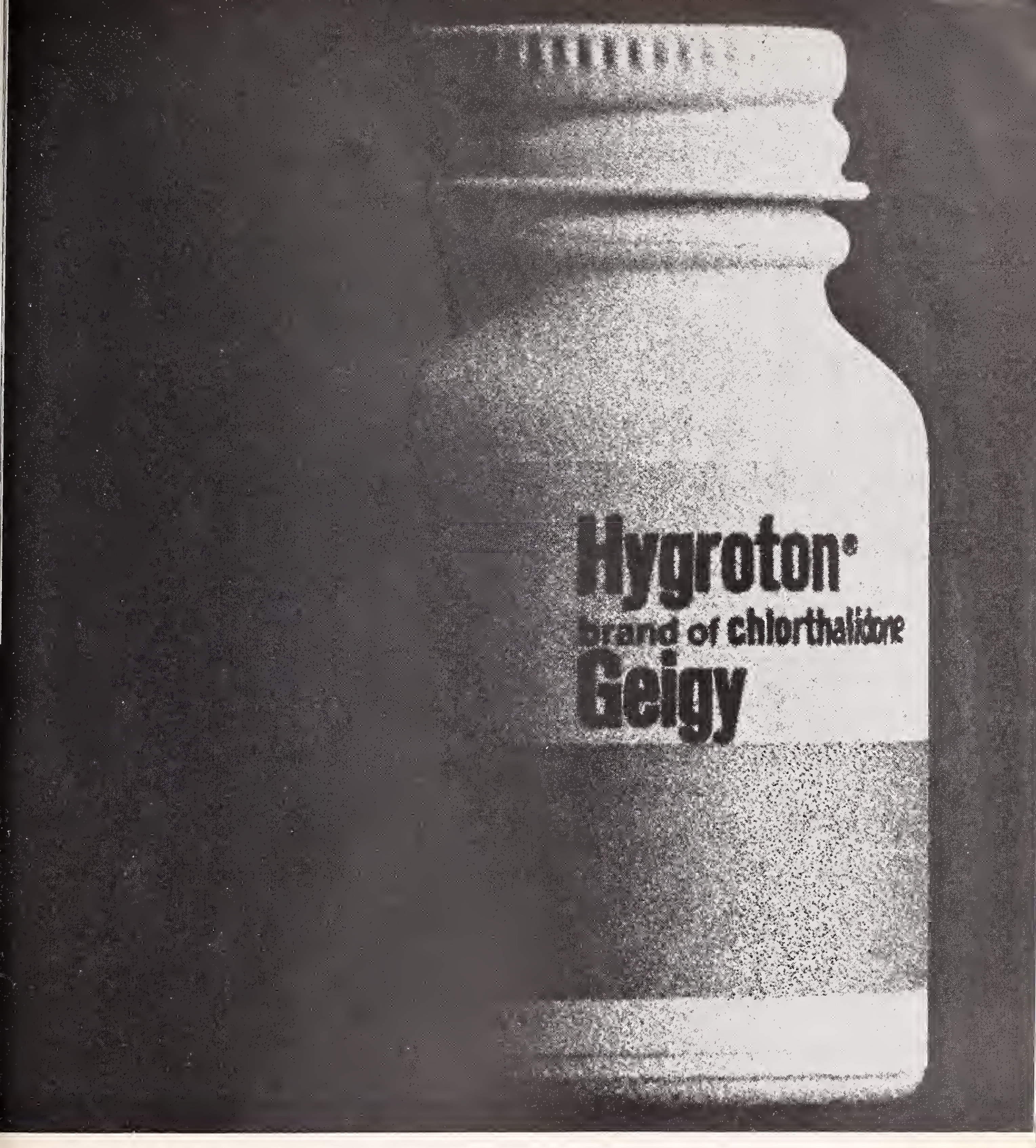

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AROUND THE STATE

New Haven County

182nd Semi-Annual Meeting
New Haven County Medical Association
October 28, 1965

The 182nd Semi-Annual Meeting of the New Haven County Medical Association was held on October 28, 1965 at the Waverly Inn, Cheshire. It was very well attended. We always look forward to the attendance of our State Society officers and we were not disappointed. County to county relations could follow their example with profit.

A large business program was featured by the passage of an amendment to the By-Laws which will make it necessary to attend one meeting in two years. There was little opposition to the amendment because of the general feeling we must insure a strengthening of our forces rather than cater to those who show an indifference to our problems by their absence.

Dr. Bernard Burnham's Ad Hoc Committee recommended that "The Economic Report of the Naugatuck Valley Society" be brought to the attention of the House of Delegates at the Semi-Annual Meeting to be held in New Haven on December 9th.

Election of a Nominating Committee and the Budget for 1966 were also featured.

The meeting was followed by a social hour and dinner. Doctors J. H. Green and Clyde L. Deming were remembered with a gift, the former on the occasion of his birthday and his devotion to County affairs. The latter upon his retirement from a long, illustrious period of practice.

Chairman of Program, Dr. Charles Verstandig introduced Mr. Joseph E. Coakley, Washington, D. C., Subsecretary of Health, Education and Welfare, Social Security Division, who discussed the Medicare Bill with the audience after a preliminary generalization of the act. Much information was exchanged.

Mr. Coakley was accompanied by Mr. Philip O'Brien, New England Regional Representative of Health Insurance Benefits, Social Security Division and Mr. Henry J. Gromko, New Haven Area Director of Social Security, who were also guests at dinner.

Respectfully submitted,

H. A. Levin, m.d., *Clerk*

Fairfield County

The following resolution on health care was presented and accepted at the Semi-Annual Meeting of the Fairfield County Medical Association:

"Whereas the well-being of the patient is the first consideration of the physician and quality medical care his primary objective; and

"Whereas all physicians should demonstrate professional concern over the politico-socio-economic forces which are influencing the shape of health care to come; therefore be it

"Resolved that the Fairfield County Medical Association urges its members and parent organizations to initiate constructive and positive methods of improving and implementing voluntary "third party" and government health care programs, including "medicare"; and be it further

"Resolved that the Association urges its members to seek wider, more active and influential roles in community, area and state health-related organizations, hospital advisory councils and legislative groups engaged at the grass roots level in shaping the health care of the future."

Research Grants-In-Aid And Research Fellowships

The Research Committee of the Connecticut Heart Association announces that applications for *Research Grants-In-Aid or Research Fellowships,* to commence July 1, 1966 or subsequently, are now being accepted until January 15, 1966.

Applications are considered for basic, clinical or epidemiological research and one year Research Fellowships having a relationship to the problems of cardiovascular disease.

Applications favorably considered by the Research Committee, will be made known to the Chapters of the Connecticut Heart Association by March 1, 1966. Financial support is granted by the local Chapters upon action of their Board of Directors:

Commitments for research support will be made known to the investigators during May 1966 and subsequently as confirmed by Chapters.

Requests for Application Forms (please specify *either* for a Grant-in-Aid *or* Research Fellowship) or other information should be addressed to:

Allan V. N. Goodyer, M.D., *Chairman*
Research Committee.
Connecticut Heart Association, Inc.
65 Wethesfield Avenue
Hartford, Connecticut 06114

News From Connecticut State Department Of Health

Streptococcal sore throat cases reported in Connecticut doubled in the week ending November 6, to 421 from 208 the week before, said Franklin M. Foote, M.D., Commissioner, Connecticut State Department of Health. This latest level was the highest number of strep case reports since the week ending July 3, Dr. Foote added.

Chickenpox rose to 70 from 49, and mumps went to 123 from 84, while measles stayed low at three compared with no cases the week before. German measles was steady at 14 compared with 15.

No new cases of tuberculosis were reported, contrasting with 10 cases of the pulmonary type the week before.

200th Anniversary Planned By Litchfield County Physicians

The 200th anniversary of the Litchfield County Medical Association will be observed during an eight-month period starting next April.

Dr. G. S. Gudernatch, of Sharon, general chairman of the Anniversary Committee of the association, said in his announcement today that "the Medical Association in Litchfield County was formed and held its first meeting on the second Tuesday of January, 1767, in the courthouse in Litchfield, Connecticut."

The association has a list of the members at that time and a declaration of the objectives of the society to "establish rules of practice and intercourse, promote medical science by providing annual consultations and dissertations, and to protect the reputation of the profession and the health of the communities from the inroads of ignorant pretenders to medical science."

It is noted that at the time the Litchfield association was organized there were no local medical schools, public officials were openly disinterested in problems of medical and health care, there were no requirements for those desiring to practice medicine, and superstition among the people often made the physician a scapegoat. In this atmosphere, quackery flourished to an extent which deeply disturbed honorable physicians and good citizens.

"Continuity, of the association," Dr. Gudernatch says, "was established by a second meeting, held in Litchfield in June, 1767, and other meetings into 1771.

"There is a call to a meeting in 1785 at Buel's Tavern, in Litchfield, and in 1792 the Litchfield association joined with other newly formed county associations for the founding of the Connecticut State Medical Society."

Louisiana State Medical Society "Betsy Fund"

The Louisiana State Medical Society is soliciting contributions to a "Betsy Fund" to aid physicians whose offices and homes were totally destroyed by Hurricane Betsy.

Dr. Charles B. Odom, president of the Society, said, "we already know of three members of our Society residing in areas below New Orleans who were completely wiped-out by the hurricane. The purpose of the Louisiana State Medical Society Betsy Fund is to assist these physicians in getting reestablished as quickly as possible."

Flood losses, which caused the greatest damage to the offices and homes of these physicians, are not covered by insurance.

"Because there are so many appeals being made to assist Betsy victims," Dr. Odom stated, "we have decided to limit ours to the medical profession. We do not plan to solicit funds from the general public."

In discussing the need to aid these physicians, Dr. Odom pointed out that two of the doctors were young men who had only been in practice a short while.

"We feel that by helping these doctors, we are not only assisting our fellow physicians, but are also helping the stormstruck communities where these physicians practiced by restoring normal medical services," Dr. Odom added.

The Louisiana State Medical Society has already made cash grants to some of the physician hurricane victims and will distribute all of the proceeds of the Betsy Fund as quickly as possible.

All physicians are invited to contribute to the Louisiana State Medical Society Besty Fund. Checks should be made to the Louisiana State Medical Society Betsy Fund, Room 1528, 1430 Tulane Ave., New Orleans, La. 70112.

WOMAN'S AUXILIARY

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Mrs. William R. Richards, Hamden

President-Elect
Mrs. John D. O'Connell, West Hartford
First Vice-President
Mrs. James F. Jones, Danielson
Second Vice-President
Mrs. Ralph T. Tella, Stamford

Woman's Auxiliary Connecticut State Medical Society

Recording Secretary
Mrs. Nicholas Creaturo, Trumbull
Corresponding Secretary
Mrs. Anthony Cipriano, Hamden
Treasurer
Mrs. Stephen A. Hulme, West Hartford

Hartford County Sends Annual Memorial Scholarship Fund Letter

The following students are recipients this year of grants from the Memorial Fund of the Woman's Auxiliary to the Hartford County Medical Association . . . Thomas Lohner, 3rd Year Tufts University; Paul O'Connell, 3rd Year Hahnemann; Ihor Zachariasewycz, 3rd Year Yale University; Robert Hamill, 2nd Year Bowman Gray; Frank Friedman, 3rd Year Albert Einstein; Donald R. Giller, 1st Year Boston University; Daniel Hoffman, 1st Year University of Louisville; Richard Miller, 2nd Year Dartmouth; Paul Sullivan, 4th Year Tufts University; Steven Hershenow, 4th Year, Tufts; Eugene Grabowski, 2nd Year, Tufts University.

This annual letter of appeal to all Auxiliary members in Hartford County and to all members of the Hartford County Medical Association asks for donations to honor the memory of Hartford County physicians who have died during the past year.

The following are the two letters which were sent:

November, 1965

Dear Member,

The eleven medical students shown here have been awarded grants this year totalling $3300.00 through your Memorial Scholarship Fund. Fifty-five students have received aid in the amount of $40,000.00 since the establishment of the Fund in 1946.

The students here pictured are representatives of Hartford County namely the towns of Granby, Hartford, East Hartford, West Hartford, Kensington, Manchester and Windsor.

Your continued generous support and your active participation both through auxiliary projects and direct contributions have made this outstanding achievement possible.

In this, our annual letter of appeal, we again solicit your contribution to perpetuate this memorial to the deceased physicians of Hartford County.

The Trustees and the students extend their deep gratitude to you for your continued financial endorsement of this important scholarship program.

Sincerely yours,

Rebekah M. Geetter, *Chairman*
Vera M. Sundquist, *Treasurer*
Rosemary T. Russo, *Secretary*
The Trustees

December, 1965

Dear Doctor,

We know you will be very much interested in reading the enclosed annual letter of appeal to our membership.

The rising costs of medical education have made our Auxiliary Scholarship Program all the more vital in assisting these deserving young medical students, all of whom are residents of Hartford County.

It is in this concrete way that the Auxiliary's Memorial Fund promotes and exemplifies your high ideals of medicine, which we are confident will be carried on by the recipients of these memorial gifts.

We earnestly seek your generosity.

Sincerely yours,

Rebekah M. Geetter
Vera M. Sundquist
Rosemary T. Russo
The Trustees

OBITUARY

Robert R. Levin, M.D.

1910 - 1965

Dr. Robert R. Levin, of Hartford, Connecticut, died at the National Institute of Health, Bethesda, Maryland, on October 5, 1965. With his untimely passing, a devoted family man, a sincere and dedicated physician and a personable, friendly human being was laid to rest.

He was born and raised in Springfield, Massachusetts. He was graduated from Harvard College in 1932 and Harvard Medical School in 1936. He interned at the Beth Israel Hospital in New York City; served a medical residency at the Sydenhem Hospital, New York City, and a pathology residency at New York Postgraduate Hospital prior to entering active service in World War II where he served in the Pacific and Atlantic theatres and was awarded the Belgian Croix de Guerre.

On his return to civilian life he entered into the active practice of Internal Medicine in Hartford, Connecticut.

He was a member of the Medical Staff of the Mount Sinai Hospital in Hartford, Connecticut and the Outpatient Department Staff of the Veterans Hospital in Newington, Connecticut. In addition, he served the community as a physician to the Hebrew Home for the Aged and the Hartford Dispensary of which he was a corporator. He was a member of the Courtesy Staffs of the Hartford Hospital and St. Francis Hospital. He was a member of the A.M.A., Connecticut State Medical Society, Hartford County Medical Association, the Hartford Medical Society and a past president of the Connecticut Veterans Administration Medical Society. He was interested in nutrition as a preventative approach to disease states in man, and served on many local and state committees on nutrition with distinction.

Those who knew Bob felt his warmth and sincerity, his enthusiasm and kindliness. He served mankind well and fulfilled a great desire to have this tradition carried on when his son, Doug, entered medical school this Fall. He will always be remembered by the community he served so faithfully and by his colleagues who respected and admired him as a man and as a physician.

He is survived by his mother, Mrs. Mamie Seltzer Levin; his wife, Virginia H. (Smith) Levin; a son, Douglas M. Levin; a daughter, Miss Joan S. Levin; and two sisters, Mrs. Howard Merblum of West Hartford; and Mrs. Joyce Feldman of New Rochelle, New York.

Charles Polivy, M.D.

In Memoriam

Snelling, Pinckney — Osterville, Massachusetts; Harvard Medical School, 1921. Dr. Snelling was a specialist in otolaryngology and former chief of the ear, nose, and throat department at Hartford Hospital. He was a member of the American Academy of Ophthalmology and Oto-Laryngology, the American Society of Ophthalmology and Oto-Laryngologic Allergy, the American Medical Association, the Connecticut State Medical Society and the Hartford Medical Association. Dr. Snelling died October 30, at the age of 68.

Physicians Continue Their Studies

Good doctors never stop studying, and today's physicians are studying more than ever.

Attendance has gone up sharply in recent years at medical "refresher" courses offered in this country. The number of these post graduate courses has increased more than 50 per cent in the past five years.

Enrollment figures are incomplete, but 71,000 physicians were registered in only half of the total number of courses offered last year, said the AMA Council on Medical Education. There was a comparable enrollment of 18,800 in 1954-55.

The current Journal of American Medical Association lists 1,641 post graduate courses available to physicians during the 1965-66 school year. The eleventh annual listing is prepared by the AMA Council on Medical Education, and represents offerings by 250 institutions in almost every state.

The courses range from brief reviews, lasting only a day or two, to medical specialty training programs extending over several months.

A major step in upgrading continuing medical education has been the formal program of course accreditation approved by the AMA House of Delegates, says a current JAMA editorial.

"There is no other field of education in which comparable certification has been attempted at the practitioner level," the editorial said.

The AMA's national plan for continuing medical education is in developing and some pilot programs will soon be ready for testing. A variety of other approaches using audio-visual and self-instructional techniques are being tried by other organizations.

"No one approach is likely to be the perfect solution to all of the problems, but, with careful evaluation, each can help strengthen the field," the editorial said.

The editorial concluded that "medical educators and practicing physicians alike will admit to unmet needs in physician education. But the record of the profession in recognizing, tackling, and solving its educational problems has been good in the past. There is every reason to expect that it will be good in the future."

Your contribution to the AMA-ERF Student Loan Guarantee Fund multiplies 12½ times in generating education loan power for medical students, interns and residents. Give generously. AMA-ERF is located at 535 North Dearborn Street, Chicago 10, Illinois.

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Contraindications: Benactyzine hydrochloride is contraindicated in glaucoma. Previous allergic or idiosyncratic reactions to meprobamate contraindicate subsequent use.

Precautions: *Meprobamate*—Careful supervision of dose and amounts prescribed is advised. Consider possibility of dependence, particularly in patients with history of drug or alcohol addiction; withdraw gradually after use for weeks or months at excessive dosage. Abrupt withdrawal may precipitate recurrence of pre-existing symptoms, or withdrawal reactions including, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, the dose should be reduced and operation of motor vehicles or machinery or other activity requiring alertness should be avoided if these symptoms are present. Effects of excessive alcohol may possibly be increased by meprobamate. Grand mal seizures may be precipitated in persons suffering from both grand and petit mal. Prescribe cautiously and in small quantities to patients with suicidal tendencies.

Side effects: Side effects associated with recommended doses of 'Deprol' have been infrequent and usually easily controlled. These have included drowsiness and occasional dizziness, headache, infrequent skin rash, dryness of mouth, gastrointestinal symptoms, paresthesias, rare instances of syncope, and one case each of severe nervousness, loss of power of concentration, and withdrawal reaction (status epilepticus) after sudden discontinuation of excessive dosage.

Benactyzine hydrochloride—Benactyzine hydrochloride, particularly in high dosage, may produce dizziness, thought-blocking, a sense of depersonalization, aggravation of anxiety or disturbance of sleep patterns, and a subjective feeling of muscle relaxation, as well as anticholinergic effects such as blurred vision, dryness of mouth, or failure of visual accommodation. Other reported side effects have included gastric distress, allergic response, ataxia, and euphoria.

Meprobamate—Drowsiness may occur and, rarely, ataxia, usually controlled by decreasing the dose. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses. Mild reactions are characterized by an urticarial or erythematous, maculopapular rash. Acute nonthrombocytopenic purpura with peripheral edema and fever, transient leukopenia, and a single case of fatal bullous dermatitis after administration of meprobamate and prednisolone have been reported. More severe and very rare cases of hypersensitivity may produce fever, chills, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic in such cases, and the drug should not be reinstituted. Isolated cases of agranulocytosis, thrombocytopenic purpura, and a single fatal instance of aplastic anemia have been reported, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity has been reported, usually after excessive meprobamate dosage. Suicidal attempts may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

Dosage: Usual starting dose, one tablet three or four times daily. May be increased gradually to six tablets daily and gradually reduced to maintenance levels upon establishment of relief. Doses above six tablets daily are not recommended even though higher doses have been used by some clinicians to control depression and in chronic psychotic patients.

Supplied: Light-pink, scored tablets, each containing meprobamate 400 mg. and benactyzine hydrochloride 1 mg.

Before prescribing, consult package circular.

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Special Notices

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PSYCHIATRY FOR THE INTERNIST

December 6-10, 1965

University of Southern California School of Medicine, Department of Psychiatry

Meeting Place: Room 2A15, Psychiatric Unit, Los Angeles County General Hospital, 1934 Hospital Place, Los Angeles, California 90033.

Director: Allen J. Enelow, M.D.

Fees: A.C.P. Members, $60; Nonmembers, $100. Minimum Registration: 10; Maximum Registration: 15.

Note: Please send all registrations, requests for information and application blanks to: Edward C. Rosenow, Jr., M.D., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pa., 19104.

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Sponsored by the Committee on Injuries of the American Academy of Orthopaedic Surgeons
Under the Direction of Wallace E. Miller, M.D.

Municipal Bayfront Auditorium, 499 Biscayne Boulevard, Miami, Florida

December 10, 11, 12, 1965

3-day advanced practical course for ambulance attendants, firemen, policemen, rescue squads, safety engineers, public health and civil defense personnel.

Illustrated lectures, audio-visual question and answer periods, special emphasis on mechanism of breathing, the airway, resuscitation, head injuries, shock, emergency childbirth, immediate care of wounds, broken bones, dislocated joints, medical emergencies, traffic control, safe ambulance driving, transporatation of the unruly, intoxicated, and unconscious patient, legal problems in first aid, water injuries, snake bites, extrication of injured from electricity, cars, buildings, fire and radioactive rescue information.

THE AMERICAN COLLEGE OF PHYSICIANS

CURRENT CONCEPTS OF INFECTIOUS DISEASES

February 7-10, 1966

Jefferson Medical College and Medical Center
Philadelphia, Pa.
Meeting Place: MeClellan Hall
Jefferson Medical College, 1025 Walnut Street

Director: Robert I. Wise, Ph.D., M.D., F.A.C.P.; Co-Director: Joseph F. Rodgers, M.D.

Fees: A.C.P. Members, $60; Nonmembers, $100. Minimal Registration, 50; Maximal Registration, 200.

Note: Registration forms and requests for information are to be directed to: Edward C. Rosenow, Jr., M.D., Executive Director, The American College of Physicians, 4200 Pine Street, Philadelphia, Pa. 19104.

Summary of Course. The purpose of the course is to review basic principles of infectious diseases as related to diagnosis and management. New knowledge in the fields of microbiology and immunology and in the utilization of antibiotic and chemotherapeutic agents will be discussed. Techniques of diagnostic procedures will be demonstrated.

Topics to be covered will be selected subjects in the field of infectious diseases including bacterial and atypical pneumonias, chronic infections of the pulmonary tract, infections of the central nervous system and gastrointestinal tract, endocarditis, viral and fungal infections, tuberculosis, staphylococcal and streptococcal infections, prophylactic and therapeuti uses of antibiotic and chemotherapeutic agents, as well as other problems.

Hotel Accommodations. The Benjamin Franklin Hotel, Chestnut Street at 9th, Philadelphia, Pa., Mr. Francis J. Mauer, Director of Sales. Single rooms, $12.00; twin-bedded rooms, $16.00.

Holiday Inn, 1311 Walnut Street, Philadelphia, Pa., Mr. Joseph M. Matz, Innkeeper. Single rooms, $11.00 to $16.00; double rooms, $15.00 to 20.00.

When writing for reservations, please identify yourself with the College and with this particular course.

THE INSTITUTE OF OPHTHALMOLOGY OF THE AMERICAS

Special Lectures

March 28-April 1, 1966

Dr. Rudolf Witmer, Director of the University Eye Clinic, Zurich, Switzerland, will deliver a series of five special lectures in English from March 28-April 1, 1966, at The Institute Of Ophthalmology Of The Americas of The New York Eye And Ear Infirmary.

The subjects will include:

1. Etiological Diagnosis in Uveitis; Serological Approach.
2. Clinical Picture in Uveitis; Treatment of Uveitis.
3. Experimental Uveitis.
4. Differential Diagnosis of Exudative Retinal Detachment by Means of Fluorescent Fundus Photography.
5. Peripheral Retinal Degeneration.

The fee for each lecture is $15.00. For registration: Mrs. Tamar Weber, Registrar, Institute of Ophthalmology of the Americas, New York Eye and Ear Infirmary, 218 Second Avenue, New York, N. Y. 10003.

CONTACT LENS FITTING COURSE

March 12-13, 1966

The Fourth Annual Contact Lens Fitting Course will be held March 12-13, 1966 under the direction of Dr. Jorge N. Buxton, Director of the Corneal Clinic at the New York Eye and Ear Infirmary.

The special Guest Speaker will be Mr. Frederick Ridley of Moorfields Hospital, London, England.

Tuition for the full-time two-day Course is $75.00 for ophthalmologists, $37.50 for Residents upon written application by the head of their department.

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"a substitute for chrysarobin"

A frequent question at medical meetings is, "What is new for psoriasis?". This advertisement brings you a new product for this disease. It is Keranil ointment and has as its active ingredient chloranil, known also as tetrachloro p-benzoquinone.

Teichmann and Horvath studying polyoxyethylene formulations of chloranil made the following observations:

SUMMARY OF CLINICAL RESULTS WITH CHLORANIL

Concentration	*Total Number of Cases*	*Much Improved***	*Improved**	*Unimproved*	*Aggravated*
10%	63	39	14	6	4
5%	30	16	10	4	0

*** Denotes resolution of at least 50%.*
** Denotes resolution up to 50%.*

DURATION OF TREATMENT

Number of Cases	14	24	18	14	9	3	7	4
Duration (weeks and months)	2 wks.	1 mo.	2 mos.	3 mos.	4 mos.	5 mos.	6 mos.	8 mos.

The types of psoriasis included (parentheses indicate number of cases); Generalized (31), Palms and soles (7), Legs and feet (18), Scalp and ears (27), Groin (3), Neck (5) and Vulva (2).

Keranil Ointment appears to be most effective against the typical psoriatic plaque characterized by heavy scales. Furthermore, it appears to benefit both palmar and plantar plaques as well as intertriginous lesions and to be least effective against the small guttate lesions.

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Availability: Keranil ointment is available in one ounce jars as a 10% concentration of choranil in a polyoxyethyene carrier.

References:
Teichmann, W. O. and Horvath, P. N.: Southern Medical Journal *50,* 1521 (1957).

Literature and samples on request.

Salem Pharmacal

Naugatuck, Connecticut

For registration and details, please write to: Mrs. Tamar Weber, Registrar, Institute of Ophthalmology of the Americas, New York Eye and Ear Infirmary, 218 Second Avenue, New York, N. Y. 10003.

FIRST NATIONAL CONGRESS ON MEDICAL ETHICS AND PROFESSIONALISM

March 5-6, 1966

Chicago, Illinois

The American Medical Association has rescheduled the First National Congress on Medical Ethics and Professionalism on March 5-6, 1966 at the Pick-Congress Hotel in Chicago.

The Congress, originally scheduled October 2-3, 1965 had to be rescheduled because of a conflict with the Special Convention of the AMA's House of Delegates on those dates. Any physician interested in attending the March Congress should write to James H. Berge, M.D., Chairman, Judicial Council, American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610, for detailed information.

COURSE IN LARYNGOLOGY AND BRONCHOESOPHAGOLOGY

March 21 to April 2, 1966

The Department of Otolaryngology of the Illinois Eye and Ear Infirmary and the College of Medicine of the University of Illinois at the Medical Center, Chicago, will conduct a postgraduate course in Laryngology and Bronchoesophagology from March 21 through April 2, 1966. This course is limited to fifteen physicians and will be under the direction of Paul H. Holinger, M. D. It will be held largely at the new Illinois Eye and Ear Infirmary, 1855 West Taylor Street, Chicago, and will include visits to a number of Chicago hospitals. Instruction will be provided by means of animal demonstrations and practice in bronchoscopy and esophagoscopy, diagnostic and surgical clinics, as well as didactic lectures.

Interested registrants will please write directly to the Department of Otolaryngology, College of Medicine of the University of Illinois at the Medical Center, Postoffice Box 6998, Chicago, Illinois 60680.

Doctor's Office

Donald B. Alderman, M.D., will continue his practice in the diagnosis and treatment of diseases of the peripheral arteries and veins but will no longer see general surgical patients at 186 Sherman Avenue, New Haven.

Stuart Howard Bender, M.D., announces the opening of an office for the practice of dermatology at 127 Kings Highway North, Westport.

H. A. Levin, M.D., announces the removal of his office for the practice of urology and special problems of andrology to 291 Whitney Avenue, New Haven.

Arthur W. Michaels, M.D., announces the removal of his office to 2167 North Avenue, Bridgeport.

Multiple Pregnancy Care Outlined

There are extra risks to both mother and infants in a multiple birth.

These hazards can be minimized, however, if a well-prepared medical team anticipates the problems of a multiple delivery, say three Chicago physicians. They outline their system of hospital care of the mother in the current Journal of the American Medical Association. The authors are Emmanuel A. Friedman, M.D., M.Sc.D., William M. Alpern, M.D., and Allan G. Charles, M.D., of Michael Reese Hospital and Medical Center, and the Chicago Medical School, Chicago.

To allow the mother as much rest as possible, she is admitted to the hospital well before labor is expected. She is put to bed, and her diet is supplemented, if necessary.

Meanwhile, the hospital's largest available delivery area is prepared. An adequate stock of cross-matched whole blood is assembled. A catheter is inserted into a vein of the mother—just in case blood, anesthetics, etc., are needed.

"It can be a rather difficult procedure, consuming valuable time, to do a simple venipuncture on a collapsed vein when the patient is in shock," the authors point out.

The mother is given oxygen, but pain-killing analgesics are kept to a minimum because of their possible effect on the infants. More than half the babies born in multiple pregnancies are premature by weight. The choice of anesthesia is made carefully, for the small baby does poorly when the mother is given excessive inhalation agents.

One of the hazards of a multiple pregnancy is that the second baby may be in a position which complicates delivery.

"As a general rule, it is probably wisest to allow the first infant to be delivered spontaneously . . . with the mother under local, regional block, or light inhalation anesthesia," the report said.

The second baby's position is determined quickly after the first birth, and its delivery is managed according to the circumstances. Great care is important, for statistics show that second twins have a lower survival rate at birth than the firstborn.

After the delivery, doctors watch for possible damage to the mother's internal organs, and guard against shock. A series of tests are made later on the mother and the infants.

"Ideally, closely supervised aftercare (of the mother) in a well-staffed recovery area will provide the kind of observation that will detect the first clinical signs of deterioration. There can be no substitute for vigilance," the report said.

The result of such a carefully pre-planned program is that risks can be greatly reduced for the mother and her babies, the report concluded.

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NEW BOOKS IN REVIEW

ELECTROCARDIOGRAPHY AND VECTORCARDIOGRAPHY: INSTRUMENTATION, FUNDAMENTALS AND CLINICAL APPLICATIONS. By Lawrence E. Lamb, The W. B. Saunders Company, Philadelphia and London, 1965, 609 pp. with 603 figures, $17.00.

Reviews by: LOUIS H. NAHUM

This is a well conceived and executed book on electrocardiography based upon thousands of serial records obtained at the U.S.A.F. School of Aerospace Medicine, Brooks Air Force Base, Texas.

It consists of nine chapters and covers well the electrophysiology of the muscle fiber. The field function on the surface of the body is taken from Franks' torso experiments and the interpretations of vectorcardiography are based upon the assumption that the heart can be expressed as a dipole producing a dipole field on the body surface. We know now that the heart is not a dipole but a complicated source of current often wtih multipoles. Consequently the mathematical concept of vector analysis is without basis. What vectorcardiography is, is merely a three dimensional graph obtained by an electromechanical union of two selected electrocardiographic leads which contain nothing more than what is present in the leads. Therefore to apply vector concepts to the interpretation of the electrocardiogram is merely to introduce another language for the same thing. In fact, the vector analysis finally disappears and we are left with a very good description of the normal and abnormal factors of P. Q, R, S, and T.; U is neglected.

This reviewer believes that a clearer understanding of the meaning of the electrocardiogram can be derived from a study of alterations in it produced by experimental procedures which modify conduction and repolarization and which produces damage endocardially, epicardially, and localized areas. Configuration of ectopic beats evoked by stimulating various regions of the ventricles can also clarify their point of origin. Finally ST segment deviations are most easily grasped when the injury current and its effect upon the different leads is understood. All these studies are documented in the literature, but have not been employed to clarify the abnormal electrocardiogram as depicted in this book.

One of the theories the author favors is that it is conduction and its variants which are responsible for T wave changes. How then does one explain that the T wave can be modified by itself by procedures which accelerate or retard repolarization. How explain the positive T in the normal electrocardiogram with an R. How explain the primary T waves which are directed similarly in some instances of bundle branch block. The author himself presents a record showing a negative T in a normal person after swallowing glucose presumably in cold water. This could not be due to altered conduction but to slowed repolarization, caused by cold in the stomach transmitted to the heart through the diaphragm. How explain T. changes without Q R S changes in pericarditis.

If we forget about the field function and the experimental basis for understanding electrocardiographic alterations and if we bypass the vectorcardiogram as being another language for the same thing seen in the electrocardiogram, then we have here an excellently produced atlas of P, Q, R, S and T changes and of arrhythmias which could be helpful to the practicing cardiologist. They have been culled from many thousands of serial records and represent a gold mine to be worked statistically for a long time to come. The reader however must not be influenced by the numerous plates on arrhythmias from the point that really only four are clinically important: atrial tachycardia, atrial flutter, atrial fibrillation, and ventricular tachycardia. These could best be understood and treated if the role of the autonomic nervous system in their production were explained.

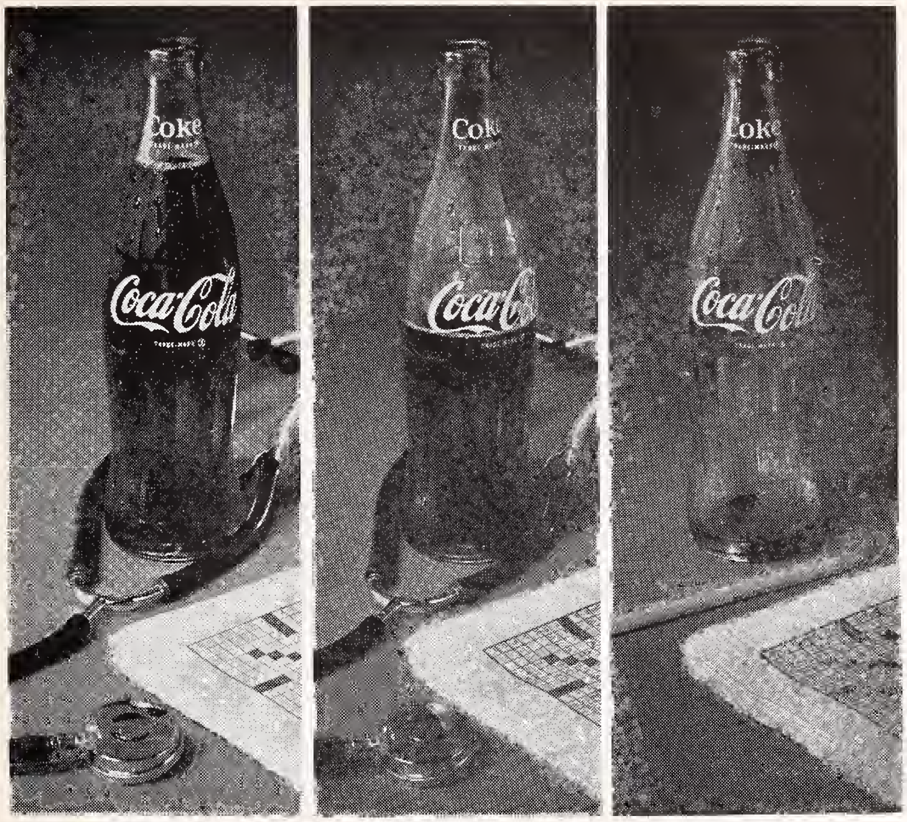
There are certain minor aberrations in terminology which doubtless will be corrected in the next edition such as upright Q R S complexes which mean predominant R waves, coronary occlusion as being equated with myocardial infarction. Then there are upside down figures 577 and 596, in figure 193 legend should read positive electrode. In figure 562 ventricular complexes probably arise in anterior septum rather than left ventricle. Figure 561 legend should read negative P in L 3 and AVF. Then there are differences in the transmembrane potential of the 5 different cells in the heart which could be emphasized because of their relation to arrhythmias. Acetylcholine is misspelled in the table of contents.

On the whole, this is a very good book, excellently printed and illustrated. But like most books on electrocardiography, the experimental basis is missing. Another thing missing is a nice historical introduction which would add much to the scholarship of the practicing cardiologist. This book would have more value for the practicing cardiologist if plates showing electrocardiographic changes of digitalis intoxication, hypo and hyperkalemia, hypo and hypercalcemia, quinidine effects, cardiac contusion and hypometabolism, were included.

FUNDAMENTALS OF OTOLARYNGOLOGY. 4th Edition by Lawrence R. Boies, M.D., Jerome A. Hilger, M.D., Robert E. Priest, M.D. W. B. Saunders Company, Philadelphia, Pennsylvania, 1964. 553 pp. $8.50.

Reviewed by: VICTOR L. SZANTON

Edmond Rostand, the playwright, wrote Cyrano de Bergerac a distinguished romance on the theme of a nose.



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A large nose: "a rock, a crag, a cape, a peninsula" he called it. The nose in the play suffers insult only from its possessor and injury from no one. Contemporary otolaryngologists Boies, Hilger and Priest claim the nose to be probably the most frequently injured organ. Rostand would say: "Injured? No! Insulted! Yes!"

Actually this tidbit of conflict gleaned from the 4th edition of this well known text offers the only morsel of negative criticism—all else is admirable.

This is a good text. The format is pleasant, comfortably legible and divided into its obvious three categories. It is well designed and clearly written. The numerous illustrations are well done. Special attention is called to certain portions. The review of the anatomy and physiology of the esophagus is interestingly delineated; the discussion of the function of the cilia of the respiratory tract mucosa is stimulating, lively and informative.

The problems of foreign bodies in the air and food passages as presented with its admonitions is mandatory reading.

Revisions have brought this book us to date. There is a "don't miss" chapter on antimicrobials.

Among others the subject of the aging of the ear and the hearing function suggests to the reviewer the need of more audiograms for practicing physicians. This, to keep proper evaluation of the natural decline of stethescopic diagnostic acumen as the decades pass by.

Worthy of shelf room in the physicians library, this new edition should not be overlooked.

THE CLIMATE IS HOPE: HOW THEY TRIUMPHED OVER CANCER. By Walter Sanford Ross, Prentice-Hall, Inc., Englewood Cliffs, N. J., 1965, 184 pp., $3.95.

Reviewed by: IRA S. GOLDENBERG

The dictionary defines hope as, "Desire or expectation of obtaining what is desired or a belief that it is obtainable." A patient with cancer hopes. He hopes for a cure. And this book supplies an arsenal of facts to bolster his hope. The book is intended by the author, an editorial consultant to the American Cancer Society, for lay people but patient and physician alike can learn from its pages about the battle against cancer in human terms.

Arthur Godfrey, the television and radio personality, relates his amazing conquest of lung cancer, and the poignant stories of Anne Lanpher, a teacher of French, and Virginia Graham, New York television star, are told with straight-from-the-shoulder frankness. Interspersed among the stories of travail and triumph are articles by leading cancer therapists who cover the gamut of modalities from radiation to chemotherapy in an engrossing manner.

The author has compounded a magnificently readable book. The naive and the learned can benefit from this volume which proclaims in a loud and persistent voice: cancer can sometimes be cured. The American Cancer Society has sponsored the publication and the foreword emphasizes its important public education role. Anyone in medicine who deals with cancer patients must read this book, and anyone suffering from cancer should read it—and hope.

BOOKS RECEIVED

Books received for review are acknowledged in this department and such acknowledgement must be regarded as a sufficient return for the courtesy of the sender. Selection will be made for review in the interests of our readers and as space permits.

Hashish: Its Chemistry And Pharmacology. Ciba Foundation Study Group No. 21. Edited by G. E. W. Wolstenholme and Julie Knight. Little, Brown & Company, Boston, Mass., 1965. 96 pp. with 8 illustrations. $2.95.

Functions Of The Corpus Callosum. Ciba Foundation Study Group No. 20. Editor and Organizer: E. G. Ettlinger. Editors for the Ciba Foundation: A. V. S. de Reuck and Ruth Porter. Little, Brown & Co., Boston, Mass, 1965. 156 pp. with 28 illustrations. $3.75.

Colour Vision. Physiology and Experimental Psychology. Ciba Foundation Symposium. Edited by A. V. S. de Reuck and Julie Knight. Little, Brown and Co., Boston, Mass., 1965. 382 pp. with 98 illustrations. $12.50.

History of the American Medical Writers' Association. (Including the Mississippi Valley Medical Editors' Association). Volume I in a Series of Two Volumes entitled History of the American Medical Writers' Association and its Previous Associated Organizations. By Harold Swansberg. Society for Academic Achievement, P. O. Box 110, Quincy, Illinois 62302. 111 pp. Illustrated. $2.50.

A Little Stork Told Me. By Kenneth R. Morgan, M.D., The William Morrow Co., New York, 1965. 128 pp. $2.95.

Hypertension, Volume XIII. Proceedings of the Council for High Blood Pressure Research, American Heart Association. Edited by Simon Rodbard, M.D. American Heart Association, New York, 1964. 200 pp. Illustrated. $2.50.

Effective Psychotherapy. The Contribution of Hellmuth Kaiser. Edited by Louis B. Fierman, M.D. Foreword by Allen J. Enelow, M.D. and Leta McKinney Adler, Ph.D. The Free Press, New York, Collier-Macmillan Limited, London. 217 pp. Price not specified.

Ciba Foundation Symposium. Control of Glycogen Metabolism. Consulting Editor: W. J. Whelan; Editor for the Ciba Foundation: Margaret P. Cameron. Little, Brown & Co., Boston, Mass., 1965. 434 pp. $12.50.

Essentials Of Gynecology. Third Edition. E. Stewart Taylor. Lea and Febiger, Philadelphia, Pa., 1965. 603 pp. Illustrated including 27 illustrations in color on 10 plates. $15.00.

Clinical Practice Of The Dental Hygienist. Second Edition. By Esther M. Wilkins and Patricia A. McCullough. Lea and Febiger, Philadelphia, Pa., 1964. 536 pp. 76 Illustrations. Price not specified.

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Albert M. Moss, M.D.
Medical Director

Leo H. Berman, M.D.
Clinical Director

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MEDICAL NEWS

Cancer And Chemotherapy

In terms of man-hours, effort and money, nothing in the history of medicine compares with the search for chemical agents effective against cancer.

"There has been progress—important progress in cancer chemotherapy," points out Jean K. Weston, M.D., Ph.D., director of the American Medical Association's Department of Drugs. "Yet a drug effective against cancer in general eludes science, although there are a few drugs that are unequivocally effective against certain forms of cancer."

Why all this difficulty?

Certainly it's not any lack of trying. By 1962, 170,000 chemicals had been studied in the continuing search for an anticancer drug. And thousands, perhaps tens of thousands, of new ones are tested each year.

The basic program, Dr. Weston explained, is that cancer presents such an enigma.

No one can put his finger on the cause of cancer. And yet there is evidence that a vast array of factors are capable of triggering cancer—chemical agents, ionizing radiation, irritants, heredity factors, viruses, and even sunlight. Current thinking is along the lines that instead of one factor, a combination of factors—viruses in association with chemical agents and a genetic disposition, for example—is responsible for the wild malignant growth of body cells we know as cancer. But no one can say for sure.

Furthermore there is the problem that cancer is so intimately bound up with life within the individual cell. Unlike other diseases which destroy cells, cancer frequently causes cells to multiply with extreme rapidity. Thus in cancer care the role of medicine is somewhat reversed. Instead of destroying a disease organism that is destroying a patient's cells, it become the physicians task to destroy or eliminate cells—cells that have become cancerous.

It is not difficult to destroy cells chemically. But it is difficult to find a chemical that will select only cancer cells for destruction and not destroy the normal cells which a person needs to live.

As if all this wasn't enough with which to confront any researcher, there are still other ironies.

Cancer comes in a multiplicity of forms. The type of cancer that can be induced to grow in laboratory animals, such as mice, isn't necessarily the same type of cancer that grows in a human being.

In the same vein, chemicals that destroy cancers in laboratory animals do not necessarily cure human cancers, while on the other hand, chemicals that show no effect on cancers in animals may show some beneficial effects on human cancers.

Thus, man himself has to serve as an experimental animal in cancer research, which in turn severely limits the scope of research. After all, what individual wants to get, and what researcher wants to produce, an experimental dose of human cancer?

It's hardly any wonder, then, that medical science, despite its massive involvement, has still not found a generally effective anticancer drug. The true wonder is that we've found as many effective chemical agents as we have that will ease the suffering of the cancer patient, prolong his life and occasionally produce a true remission of the disease.

Yet, by dint of much research, trial and error and luck interspersed with keen observation, certain chemicals displaying such tendencies have been found. More than anything else it is these discoveries which continue to breathe hope into the exhaustive search for an anticancer drug.

Generally speaking there are four or five main groups of agents used in cancer chemotherapy, depending upon what you classify as a drug. They are:

- Antimetabolites—agents which tend to induce a shutdown of some necessary cell function. Since cancer cells are the ones multiplying most prolifically, the effect of an antimetabolite is frequently most pronounced on cencer cells. About four of these are in fairly common use.
- Cytotoxic agents — chemicals which have the ability to destroy cells, but exhibit a tendency to destroy cancerous cells in preference to normal cells. Among these is nitrogen mustard—first cousin to the mustard gas used in World War I.
- Hormones — organic chemicals — steroids, estrogens, androgens, etc.—which are normally produced by the body, have also shown evidence when supplied artificially as a drug of suppressing some of the symptoms of cancer, particularly in the acute stages, or in cancer of some of the sex organs.
- Radioactive isotopes—varieties of certain chemicals such as iodine and phosphorous, which certain parts of the body normally take up, and which if supplied in radioactive form will produce something of an irradiation effect against cancers located in those organs which absorb them.

In addition to supplying these drugs in normal fashion, such as in pill or injection form, some have also been administered by perfusion.

In this method of administration, the cancer tumor is isolated from the body's blood supply as much as possible, and heavy doses of chemotherapeutic agents are pumped through the arteries and veins supplying the tumor.

This method is particularly suited to tumors of the extremities, such as the leg, but a method for perfusion of the blood supply to the lung has also been evolved.

No method, just as no drug, has yet been evolved that will solve the complete riddle of cancer. But there is hope—ever growing hope, Dr. Weston said.

Today we are curing more cases of more types of cancer than ever before. And as new drugs are found, as new techniques are developed, the day is drawing closer when cancer too, like so many other diseases, will no longer harbor such dread for mankind.

Surgery That Shortens Small Intestine Lowers Cholesterol Levels In 15 Patients

One way to save a man's heart may be through his intestines.

So says Dr. Henry Buchwald, an established investigator of the American Heart Association at the University of Minnesota Medical School, who has developed an operation to shorten the small intestine as a means of increasing the elimination of cholesterol, thereby lowering the amount in the bloodstream.

High blood levels of cholesterol and other fats are associated with an increased risk of heart attacks. Whether a drop in cholesterol levels will lessen the risk is still open to question, however.

The operation devised by Dr. Buchwald creates a detour around the lower third of the small intestine, the site where most of the cholesterol taken in through the diet or made by the body is normally absorbed into the blood. As the result of the operation, instead of entering the bloodstream, the cholesterol passes into the large intestine and is excreted.

Recently Dr. Buchwald gathered preliminary evidence that in rabbits this intestinal by-pass surgery not only causes cholesterol levels to drop sharply but apparently also arrests the development of atherosclerosis. (Atherosclerosis is the process of artery-hardening or clogging which sets the stage for heart attacks and strokes.)

Since 1963—after having established in laboratory animals that a similar operation did lower blood cholesterol—Dr. Buchwald and his associate, Dr. Richard Varco, have performed intestinal bypass surgery on 15 patients. Most were in their 30's and 40's, had very high cholesterol levels and had already had one or more heart attacks. Three patients were operated upon who had not yet had a heart attack but who seemed to run an especially high risk. Each of these patients had an excessively high blood cholesterol level and belonged to a family with a history of many heart attacks.

Following surgery all patients showed a significant drop in cholesterol levels—averaging about 40 per cent. From levels of 280 to 600 (milligrams per cent), their cholesterol readings have fallen to a mean of about 200 postoperatively. The average figure in the U. S. is about 230.

Dr. Buchwald said in an interview that surgery was not performed in these patients until every dietary means of reducing cholesterol levels had been tried. He added that it is still too early to tell whether the operation will help halt the athersclerotic process in these patients as it appears to have done in rabbits.

The results:

Most of the rabbits *fed a high cholesteral diet* and *not* treated by surgery developed severe atherosclerosis; about half died of heart attacks.

Those operated upon *before* being fed the high cholesterol diet were completely protected from atherosclerosis. Moreover, their average blood cholesterol levels stayed below the levels in the control group.

In rabbits operated upon *after* eating the high cholesterol diet, the excessively high blood cholesterol levels they developed on the diet dropped to normal levels after surgery and remained normal despite continuation of cholesterol feeding. Organ deposits of cholesterol in their bodies cleared rapidly and none succumbed to heart attacks. Furthermore, microscopic examination of their blood vessel walls showed that the development of atherosclerotic formations had been checked.

Dr. Buchwald said that he may also have seen some signs that the atherosclerotic process in rabbits alive nearly two years after surgery has been reversed—but calls his evidence "still far from conclusive."

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Supplement to CONNECTICUT MEDICINE — November, 1965

THE MEDICARE LAW — P.L. 89-97

AN ASSESSMENT OF ITS PROFESSIONAL IMPLICATIONS

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(On October 17, 1965, the CSMS Council voted to publish this material as a Supplement to the Journal, and to distribute copies thereof to the physician members of the Connecticut State Medical Society for their information.)

THE MEDICARE LAW — P.L. 89-97
AN ASSESSMENT OF ITS PROFESSIONAL IMPLICATIONS

Preface

Prior to the enactment of the Social Security Amendments of 1965, which embody the new Medicare Law, the position of American medicine on compulsory, tax-supported "social" financing of health services had, of necessity, to be expressed in more or less hypothetical terms; i.e., *if* this legislative proposal or that were to be passed, its effects on the patient-physician relationships and the quality of medical care would *probably* be thus-and-so. Since such a revolutionary scheme had never been tried out in the United States, it was not possible for any one to say with certainty just how it would work.

Furthermore, the testimony presented by spokesmen for the profession to committees of Congress on a succession of "medicare" bills (Murray-Wagner-Dingell, Forand, King-Anderson, and others) was heard rather exclusively by legislators—a very limited audience at best, and, as each of the earlier measures failed to gain widespread support, the views of organized medicine concerning them were buried in the archives where records of this kind are filed away for posterity.

Consequently, most people in this country—and, indeed, most of their doctors, have never before had to come to grips with the realities of massive intervention of Federal government in the field of personal health services; neither patients nor physicians have been prompted in the past to do more than speculate in the abstract as to what major changes, for good or for bad, the enactment of such a law would cause in the traditionally voluntary system of American patient care.

Today, however, the situation has been drastically altered. Final passage of the Medicare Law has lowered the curtain on almost twenty years of debating the "idea" of the legislation. The long debate has been ended, and now attention must be turned at once toward putting the theories of social health insurance into practice in our nation—toward the drafting of a multitude of rules and regulations by the various Federal agencies responsible for promulgating, administering and controlling the different programs provided for by the Law, and toward the drafting of "livable" positions of accommodation to those rules and regulations by all who will shortly become subject to their enforcement.

In this new climate which Congress has created, wherein medical practice and Federal statutes have been made inseparable bedfellows, the long-ignored fundamental issue of so-called "socialized medicine" has finally been brought into sharp focus. For the patient, it will be the right—or lack thereof—to continue to exercise freedom of choice in arranging for his personal health care. For the doctor, it will be the right—or lack thereof—to continue to exercise freedom of judgment in making professional decisions of vital importance to those he serves.

The Congress took nearly two decades to reach agreement on the final provisions of Medicare—a considerable period of time. But the basic medical tenents which guide and discipline today's practitioner in his chosen work have been forged during the passage of several centuries—a very much longer period of time. The former are as yet theoretical and untested; the latter have withstood their trial by fire, over and over again.

In this current atmosphere of radical change and widespread uncertainty, it is felt that the responsibility of medical leadership is not so much to formulate *new* rules of professional conduct for physicians under the Medicare statutes of 1965, as it is to reaffirm and redefine for the practitioner those long-established principles which have carried American medicine to its present high level of achievement, and to assure, to the greatest degree possible, that those principles will not have to be abandoned or even seriously compromised in the critical years that lie ahead.

It is in the spirit of attempting to discharge this latter responsibility that the Connecticut State Medical Society has prepared this assessment of the professional implications of Public Law 89-97 for perusal by its members.

I. GENERAL CONSIDERATIONS

By an act of the 89th Congress, commonly called the Medicare Law, the Federal government has been empowered to enter into contracts with practically all persons age 65 and older, and with many persons in other special categories, to make cost-controlled payments on their behalf to the providers of certain institutional services and certain other health services, all such contracts to be subject to stringent conditions embodied in the Law itself and to additional rules and regulations which the Law authorizes the Secretary of Health, Education and Welfare to impose immediately, and from "time to time" thereafter.

It is emphasized, and should be recalled frequently, that none of the Medicare contracts outlined above will, in any *literal* sense, make the Federal government responsible for "paying the medical bills" of these millions of potential beneficiaries. As a matter of fact, the Law clearly stipulates that the providers of all health services will be reimbursed *solely* on the basis of "reasonable costs or charges," and that the standards of "reasonableness" will be set by the Secretary of HEW for each category of providers.

It is further stressed, now and for future reference, that the primary *legal* parties to all such contracts are actually only *two* in number; i.e., the Federal government and the persons who are ruled eligible to receive the covered services at taxpayers' expense. The election to become a legal *third* party to any type of Medicare contract—in particular, by the providers of health services—is ostensibly entirely voluntary under P.L. 89-97.

However, once such a provider has applied to the Secretary for certification to furnish services and be reimbursed for same, and has been so certified, it will be mandatory for the provider to enter into a binding legal agreement to furnish services in strict conformance with HEW regulations and to accept payments on the basis of HEW determinations of "reasonable costs or charges." While under contract, the provider will be expected to yield to rulings of the Secretary whenever questions of Medicare's administration arise, since the authority vested in him appears to be both all-inclusive and final in these matters.

If the various types of health services could be pigeonholed, so as to make each type a separate and discrete entity, it might be possible for one category of providers to enter into contracts with HEW without involving other categories of providers in any way. Unfortunately, this possibility seems unlikely to be achieved. For example: In order for a Medicare patient (under contract) to receive hospital services at government expense, and for a hospital (also under contract) to receive payment for services rendered to that patient, it is required that the attending physician (*not* under contract) be asked to complete and file one or more forms certifying to the "medical necessity" of the patient's admission to, and continued stay in, the hospital. The professional implications of some of these "cross-overs" of obligation between Medicare contractors and non-contractors will be evaluated further on in this assessment.

II. THE MEDICARE LAW AND THE PRACTICING PHYSICIAN

Ever since President Johnson affixed his signature to the Social Security Amendments of 1965, a great deal of discussion has been engendered in both professional and public circles as to the "legality" of a physician's personal decision not to take part, or to take only a limited part, in the several types of health benefits programs provided for under P.L. 89-97. At the moment, it may be said that much of this discussion is rather academic since very few people are as yet competent to even interpret the meaning of the major provisions of the law, let alone to render final verdicts as to their legal implications.

In general, however, it is reasonably safe to say that, insofar as compulsory or involuntary involvement of the doctor of medicine is concerned, there appear to be no clearly defined provisions of the Law that will *directly* compel the private practitioner to depart from his "usual and customary" methods of rendering patient care, either as to diagnosis and treatment or as to making charges for his services. The Law seems to be most specific in this regard.

In precise and presumably unmistakable language, under the featured heading of *"Prohibition Against Any Federal Interference," Title XVIII, Section 1801,* declares: *"Nothing* in this title (Health Insurance for the Aged) shall be construed to authorize *any* Federal officer or employee to exercise *any* supervision or control over the practice of medicine or the manner in which medical services are provided . . ."

From a lay (non-legal) standpoint, this apparently unqualified disclaimer of Federal interference in the practitioner's usual and customary medical care of his patients seems in perfect accord with Section 6 of the *AMA Principles of Medical Ethics,* which reads:

> "A physician should not dispose of his services under terms or conditions which tend to interfere with or impair the free and complete exercise of his medical judgment and skill or cause a deterioration of the quality of medical care."

In the light of such evident harmony between the intent of Congress and the intent of this ethical principle, it appears unwarranted to so much as speculate that the Secretary of HEW would ever try to impose, or that a physician would ever be asked to comply with, any rule or regulation of Medicare which might tend to violate the spirit of either. In Section 1801, the government has plainly certified the ingredients of the Medicare "pudding" to be pure and entirely safe for the doctor's consumption. It is unthinkable that the "eating" might furnish proof to the contrary.

Hence, if this new Law means what it says and is promulgated completely within that meaning, it is difficult to conceive that the doctor who practices competent and ethical medicine could ever be found to be acting "illegally" with respect to P.L. 89-97 or any other statutes. Further, it is hard to imagine why it would be necessary for such a physician to change his usual and customary methods of practice when treating Medicare cases, unless he elects to contract with the Department of HEW or one of its fiscal agents to do so.

The foregoing is intended to inform the doctor of medicine concerning the legal implications of Medicare (insofar as they are now understood) as it appears they may apply to him personally in his practice. However, it is expected that for every basic provision of P.L. 89-97 there will be established a host of regulations with which to promulgate it, and nothing in this assessment is meant to suggest that these myriad regulations may not "rub off" on him to some extent in their over-all enforcement.

It must be kept in mind that the practitioner frequently renders patient care in concert with other providers of health services, such as hospitals, convalescent facilities and home treatment agencies. As reported (Section I) previously, the Law states that providers like these must enter into agreements with HEW in order to qualify to receive Medicare payments, and that, in so doing, they must also agree to furnish services in conformance with regulations. It is in those areas of what have already been referred to as "cross-overs" of obligation between Medicare contractors and non-contractors that the physician may find himself confronted with situations in which *indirect* bureaucratic pressure may be brought to bear on him to alter or even completely change his medical judgments when Medicare cases are involved. The principal source of such pressures will probably be Title XVIII, Part 1-A—"Hospital Insurance Benefits for the Aged." Some of these potential problems will be considered at length in the section that follows.

III. PART 1-A—THE PROGRAM OF HOSPITAL INSURANCE BENEFITS

Part 1-A of Title XVIII provides a program of benefits for inhospital services (effective July, 1966), outpatient hospital diagnostic services (effective July, 1966), post-hospital home care services (effective July, 1966), and extended care services in approved convalescent facilities (effective January, 1967). As has been pointed out earlier, the government will make cost-controlled "payments" to certified providers of such services, rather than "pay the bills" of same, but there can be no doubt that Part 1-A provisions will relieve some 15-20 million persons age 65 and older of much of the responsibility of meeting incurred expenses for these services out of personal or voluntary insurance resources. Since no "means test" is to be applied under this part of the Law, wealthy and poor will benefit alike, and all will be subject to the same rules and regulations that the Secretary of HEW eventually lays down for administration of the plans.

Part 1-A contracts will authorize *no* payments to be made to the Medicare patient's attending physician for services rendered in any of the institutions or home care agencies under contract to HEW. Unless the Law is amended before its implementation in 1966, or unless subsequently imposed regulations permit some looseness in the Law's interpretation, this exclusion will apply with equal stringency to the so-called "hospital based" specialties; i.e., pathology, radiology, anesthesiology and physiatry. The AMA has supported, and will continue to support (see Appendix A, Page 15), the positions in this regard adopted by the national boards and colleges of these groups of practitioners; i.e., that such services are *medical* services—not *hospital* services, and that patients should be billed for same by the physicians rendering them. On that account, it is not the purpose of this assessment to furnish members of the Society with definitive information about the probable scope and duration of institutional coverage, the beneficiaries will be given under Part 1-A.

It is expected that such details, when finally drawn up by the Secretary et al, will become available to the public and the profession from official government sources. Parenthetically, it may be said that Medicare "facts and figures" obtained from other sources (especially from commercial ones which are being rushed into print) may be so oversimplified as to be misleading.

The M.D. As A Source Of Medicare Information

At the present time, the Department of Health, Education and Welfare, the Social Security Administration, the U. S. Public Health Service and other involved Federal agencies are said to be experiencing nightmares of confusion in trying to come up quickly with literally thousands upon thousands of Medicare regulations which will not contradict each other or be reduplicative in their application to the various programs to be made operational under the Law. Hence, for the moment, P.L. 89-97 must be looked upon only as broad "enabling legislation" which, in itself, is not suitable for any but experts to interpret. For this reason, it would be most unwise for the Society to try to furnish its members with specific analyses of the Law now, or until all the facts have been made known.

For the same reason, it would seem equally unwise for the physician to attempt to advise his elderly patients in these matters, especially in regard to their possible entitlement to benefits under its various parts and the specific nature of such benefits. Unless the doctor himself fully understands every section and subsection of the Law, his advisements will more likely misinform patients than enlighten them.

As a case in point, the practitioner might venture a guess as to what he would offer as a meaningful interpretation of the following:

> "Section 1814 (a)—Except as provided in subsection (d), payment for services furnished an individual may be made only to providers of services which are eligible therefor under section 1866 and only if —(1) written request, signed by such individual except in cases in which the Secretary finds it impractical for the individual to do so, is filed for such payment in such form, in such manner, within such time, and by such person or persons as the Secretary by regulation may prescribe; . . ."

Since in this and almost every other section of the Law the Secretary is authorized to impose regulations, and since no clearcut definition is given as to what the "Secretary may by regulation prescribe" or may change "from time to time," most physicians may well conclude that it would be greatly to their patients' advantage for them to suggest that the answers to all questions on Medicare be sought directly from the Social Security office administering the Law at local level. HEW and other involved Federal agencies are reported to be hiring tens of thousands of additional employees for this purpose, and they will probably be trained to try to answer such questions in language the average person can understand. Those who have read through P.L. 89-97 can appreciate that the task of these clerks will not be an easy one.

Expected Utilization Of Hospital-Type Services

Most hospital administrators, convalescent facility operators, and other experts in institutional care are predicting that when Part 1-A benefits become available in July, 1966 and thereafter, the demand for admission to hospitals and related facilities will immediately increase 20-35 per cent due to an influx of patients age 65 and older. Undoubtedly some of these admissions will be justifiable on the basis of medical need—a need previously unmet because of financial inadequacy to pay the bills. It is anticipated, however, that such cases will constitute a minority; i.e., a National Blue Cross vice-president recently told the House Committee on Ways and Means that his organization was "unaware of the existence of any appreciable segment of the over-65 population that has been going without essential hospital treatment."

On the other hand, say the experts, vast numbers of older people are expected to seek admission to hospitals and nursing homes on the grounds that they have become entitled to such services "as a matter of right"—a promotional phrase used over and over again in recent years by the advocates of Medicare legislation. Hence, many aged persons whose only need is for custodial care (*not* covered at all under P.L. 89-97) are likely to put pressure on physicians to issue them certificates of "medical necessity," without which, by HEW regulations, hospitals and similar institutions cannot admit them, or, once admitted, allow them to remain as inpatients beyond certain stipulated limits.

Should these educated predictions prove to be well-founded, the private practitioner of medicine may well find himself cast in the role of "policeman" for the Hospital Insurance Benefits program —a role he may be most reluctant to assume, and one which is surely not assigned to him by any provision of the Law. Under such circumstances, adherence to usual and customary methods of admitting and discharging Medicare patients may be made extremely difficult for him.

On the one hand, if his medical judgment in this regard happens not to be pleasing to an older patient or a relative of same, he may become a target for criticism and animosity. It is not beyond the realm of possibility that such displeased persons might even try to "make trouble" for him if he does not yield to their demands, perhaps attempting to discredit his medical judgment by "shopping around" among his colleagues for a contrary opinion or seeking to hold him responsible for unrelated complications which developed at some later time.

On the other hand, he will not really solve anything by "letting down the bars" in this matter and, to conserve his time, accede willy-nilly to the desire of the patient (a practice resorted to, in desperation, by many doctors working under socialized medicine in Great Britain and elsewhere.) Since each institution under contract to HEW will have a "utilization review committee" to check on the medical necessity of every admission, it is doubtful that such a liberal policy would go unnoticed for very long or that, when detected, its further pursuit could not place the physician's staff privileges in some degree of jeopardy. To the extent that Medicare regulations imposed by the Secretary on all contracting institutions become embodied in the "rules of the staff" of an institution, to the same extent the physician will probably be held responsible to comply with them in full. Any claim that he, himself, is not under contract to HEW may be looked upon by the institution's administration as rather academic and, in any event, irrelevant. It would therefore appear that the proposed relationship between HEW rules for controlling utilization (costs) and existing staff rules governing professional conduct recommends itself as a subject for careful study by the joint conference committee of the staff and the board of directors of each institution that intends to participate in the programs under Part 1-A.

It almost goes without saying that the primary objective of the physician will be to continue to do what is best and proper for his patients, but it may be found that good intentions alone will not suffice in the new medical environment created by P.L. 89-97. Those who have become accustomed to the simplicity of admitting and discharging patients covered by Blue Cross and other voluntary plans may find themselves caught on the horns of a dilemma in trying to deal satisfactorily with some of the potential problems just described. Certainly the physician should not be expected to waste valuable time debating "medical necessity" vs. "matter of right" when an older patient or relative seeks his certification for admission to, or prolonged stay in, an institution. Neither should he be expected to risk damage to his professional reputation in the community by being unduly firm in judgments of this kind or in the hospital by being too lax in them.

Probably only first-hand experience with these regulations of Medicare will enable the practitioner to develop workable guides for complying with them in an ethical manner. However, at least one possible "rule-of-thumb" may warrant careful prior consideration by each member of the Society; i.e., should the patient question the validity of his judgment concerning the "medical necessity" for a primary admission, it would appear to be both legal and ethical for him to insist that prompt consultation be held with another qualified physician who is on the staff of the institution involved. It is often claimed that "two heads are better than one," and, if this be so, such consultation might do a great deal to protect the interests of all concerned. The question of prolonged stay will be taken up under "The Role of the Utilization Review Committee" (see Page 6).

Admitting And Discharge Procedures

As has been stated previously, and exemplified at some length in the immediately foregoing section, certain provisions of the Hospital Insurance Benefits program may *indirectly* present problems to the private practitioner in his management of a Medicare case. These may vary in significance from the mere mechanical (but often expensive) drudgery of filling out numerous government forms, to the far more weighty ones raised by his being asked to yield in his professional judgments to cost-oriented regulations which seem destined to become integral parts of the binding agreements into which institutions must enter with the Secretary of HEW. In the discussion of several of these matters which follows, it is well to stress again that inhospital services of the attending physician are not covered for payment under Part 1-A and, therefore, that none of the required forms and certificates he will be asked to complete are for his benefit in any way.

(1) *Completion of Required Forms*: Section 1814 (a) reads:

"Except as provided in subsection (d), payment for services furnished an individual may be made only to providers of services eligible therefor under section 1866 and only if . . . (2) a physician certifies (and recertifies, where such services are furnished over a period of time, in such cases, with such frequency, and accompanied by such supporting material, appropriate to the case involved, as may be provided by regulations, except that the first of such recertifications shall be required in each case of inhospital care not later than the 20th day of such period)."

From the wording of this section (and other similar sections applying to extended-care facilities and home-care agencies), it can be deduced that the Medicare patient's attending physician will be asked to complete and file a substantial number of forms if the patient is to receive authorized services and if the institution is to be paid for furnishing same. At this writing, the simplicity or complexity of the forms which will be issued for such certification and recertification purposes is not known, nor are the details of what is meant by "supporting material." It seems evident, however, that one or more of the following considerations may present themselves to the practitioner in completing and filing these documents:

(a) *Privileged Information:* In completing documents such as applications for life insurance, the physician is often asked to divulge privileged information concerning his patient's past and present health status, and he complies with such requests only when they are accompanied by written authorization from the patient for him to do so. By obtaining prior authorization, his compliance is not out of keeping with the intent of *Section 9* of the *AMA Principles of Medical Ethics,* which reads:

"A physician may not reveal the confidences entrusted to him in the course of medical attendance, or the deficiencies he may observe in the character of patients, unless he is required to do so by law or unless it becomes necessary in order to protect the welfare of the individual or of the community."

As far as is known, the pertinent provisions of P.L. 89-97 are not intended to encompass the meaning of either of the exceptions ("law" and "welfare") stipulated in Section 9 of the *Principles.* Hence, in completing Medicare forms, it would seem advisable for the practitioner to continue his usual and customary procedure in this regard; i.e., if the forms ask him to divulge privileged information, he comply only after obtaining written consent of the patient to do so.

(b) *Time-Cost Factors:* Should the forms provided for certification and recertification purposes under Section 1814 (a) of Part 1-A prove to be brief and simple, requiring only a few moments of the physician's time to complete, it is doubtful that he would wish to assess any charge for this service. From past experience with government-operated programs, however, it is equally doubtful that these forms will be of a succinct nature.

If the forms prove to be lengthy and/or complex, it seems inevitable that either the physician or his office personnel or both will be called upon to spend a good deal of time and effort to complete the required documents, particularly with reference to the "recertification" and "supporting material" regulations. In such event, and the practitioner is considering whether to assess or not to assess a charge for this demand upon his time and person, he may choose to be guided by a relevant policy of the Connecticut State Medical Society (Appendix B, Page 17) which reads:

"The physician shall be responsible for completing for the patient such *reasonable* claim forms as may be required by third party agencies, and for preparing and furnishing, *at appropriate cost,* such other statements or certificates concerning the patient's health status as may be requested by the patient or by persons or agencies authorized by the patient to obtain such documents from the physician."

The Medicare Law, as written, does not appear to include payment for this service of the attending physician under the provisions of Part 1-A. Neither does the Law indicate on whose behalf the physician will be performing the service; i.e., for the patient, for the institution, or for the Secretary of HEW. In the absence of direction from P.L. 89-97 in this regard, and unless some future regulation affords clarification, the practitioner may find suitable guidance in this matter by referring to another policy of the Society (Appendix B, Page 17) which reads:

"The patient (or his legal relative or guardian) shall be responsible for payment of the physician's fee."

Under Part 1-A, the Law clearly establishes precedents for placing responsibility on the patient to pay for services which are over and above those for which the government will assume financial liability. For example: The patient must pay $40 out-of-pocket (or from other sources) for each "spell of illness" which requires up to sixty days of inpatient hospital care, and an additional $10 per day for further hospitalization from the sixty-first day on through the total of ninety days which are allowable. The hospital is authorized to collect these amounts directly from the patient or his agent. This "direct charge" provision also applies to convalescent facilities and to certain other providers of services.

Therefore, while not so stated in the Law, it would appear that the physician would be acting both legally and ethically if he followed a similar direct billing procedure with respect to his charges for completing forms and certificates which he considers to exceed "reasonable" limits. It is expected that, in assessing charges for this type of service, most physicians would follow their usual and customary practice of modifying their fee to accommodate the patient in reduced circumstances or even waive such fee if the situation warrants. It is pertinent to recall, however, that entitlement to "free" benefits under Medicare is not based on income or ability to pay, but on *age*—65 years and older. Hence, Medicare entitlement and medical indigency are not necessarily at all synonymous in this context.

Should such a billing be questioned, the physician may wish to suggest that the patient or a legal relative or guardian seek resolution of the question from the local Social Security office. He might also wish to suggest that his county medical association be asked to rule on the propriety of his charge.

The Role Of The Utilization Review Committee

Under the Law, as enacted, it will be required that each hospital and convalescent facility under contract to the Department of HEW have a "utilization review committee." The ostensible purpose of this committee will be to promote "the most efficient use of available health facilities and services," a purpose which almost anyone would look upon as commendable. However, it seems clear that this committee will also serve as an indirect agent of the Secretary and be empowered to enforce his rules and regulations with respect to the admission, discharge and transfer of Medicare patients to and between hospitals and extended-care facilities, and, as well, to rule on the "medical necessity" of all treatment prescribed by the patients' attending physicians.

The Law provides that such a committee may be "either (A) a staff committee of the institution composed of two or more physicians, with or without the participation of other professional personnel, or (B) a group outside the institution which is similarly composed and (i) which is established by the local medical society and some or all of the hospitals and extended-care facilities in the locality, or (ii) if (and for so long as) there has not been established such a group which serves such institutions, which is established in such other manner as may be approved by the secretary."

As defined by statute, three duties of the utilization review committee are as follows:

". . . review, on a sample or other basis, of admissions to the institution, the duration of stays therein, and the professional services (including drugs and biologicals) furnished (A) with respect to the medical necessity of the services, and (B) for the purpose of promoting the most efficient use of available health facilities and services"; and

". . . review, in each case of inpatient hospital services or extended-care services furnished to such an (eligible) individual during a continuous period of extended duration, as of such days of such period (which may differ for different classes of cases) as may be specified in regulations, with such review to be made as promptly as possible, after each day so specified, and in no event later than one week following such day"; and

". . . (make) prompt notification to the institution, the individual, and his attending physician of any finding (made after opportunity for consultation to such attending physician) by the physician members of the committee or group that any further stay in the institution is not medically necessary."

In normal practice, such decisions as admitting and discharging patients and prescribing courses of treatment for them are left to the medical judgment of the attending doctor. Although most hospitals already have utilization committees, they presently operate intramurally as a function of the medical staff and are not subject to control by agencies outside the institution. Further, their concern is solely with the proper utilization of institutional facilities by members of the staff; *not* with the medical management of their private patients. In the latter area, the quality of care being rendered in the hospital by staff physicians is continuously being evaluated by other appointed agents of the staff; i.e., by surgical audit committees, morbidity and mortality committees, tissue committees, and the like. A high quality of care is also fostered by department heads through rules such as mandatory consultation with qualified physicians in complicated or unusual cases.

The language of P.L. 89-97 strongly suggests that the utilization review committees called for under the provisions of the Hospital Insurance Benefits program will differ substantially and in several ways from those with which most practitioners are now familiar. In the first place, the committee will review "each (Medicare) case," in the manner and at the times that regulations will specify, as to the "medical necessity" of the admission itself and the need for "any further stay" in the institution. In the second place, the committee will pass similar judgments on the necessity of the hospital-type services which are prescribed by the attending doctor. And finally, it may be placed under greater primary obligation to comply with the cost-oriented rules laid down by HEW than to further the medical interests of the patient.

The language of the Law also strongly suggests that should there be a difference between the judgment of the physician members of the committee and that of the attending physician (whether *opportunity* for consultation with him has been consummated or not), the judgment of the committee members will prevail.

Should such a difference of medical opinion occur, irrespective of whether the difference involves admission, discharge, transfer, treatment, or some other important aspect of patient care, it seems likely that grave ethical questions might be raised. On the one hand, the attending doctor could be under pressure to yield in his judgment to rules imposed by HEW. On the other, he would also be expected to continue to assume full professional responsibility for the management of the case. Assessed by existing standards, such a position would be considered ethically untenable.

To assist members of the Society in resolving questions of this type in a medically acceptable manner, it is suggested that they review again and be guided by Section 6 of the *AMA Principles of Medical Ethics* (see Page 21). The harmony between this principle and the government's pledge of absolute non-interference with practice (see Page 2) has been pointed out previously.

However, should the physician be subjected to administrative pressure to comply with HEW regulations and be prevailed upon to yield in his judgment to those regulations, it is strongly suggested that he do so only after obtaining from the chairman of the utilization review committee a written statement transferring from himself to the committee full responsibility for any and all deleterious effects the patient may suffer as a consequence of the committee's ruling that the treatment *he* felt to be appropriate was not "medically necessary." A copy of the signed statement could then be made a permanent part of the patient's hospital record, accompanied by a written statement of the attending doctor's contrary opinion. Should the chairman decline to furnish the statement requested, it would seem wise to make detailed note of same on the chart.

Such a policy of insistence on "rendering unto Caesar that which is Caesar's" should prove to be unassailable, both legally and ethically. It is true, of course, that notification by the committee that no further stay in the institution is necessary does not actually mean that the patient will be compelled to leave. It is assumed that it will mean only that the government has been relieved of all responsibility to pay for his care any longer; i.e., he will have been put "on his own." If his doctor writes a "stay" order and the patient can afford to do so, it is possible he may be allowed to receive further inpatient treatment. If he cannot afford it, or refuses to pay "as a matter of right," it is not known what the consequences may be.

In any event, this problem for the patient will not have been created by his attending physician but by the provisions of the Law, and it is certainly not the responsibility of the practitioner to furnish a solution. Perhaps the institution's administrator or social workers could be of assistance to the patient in such cases (which will probably be quite rare) or, in extreme situations, perhaps only an attorney will be able to clear up the confusion.

It is said that the shoemaker should stick to his last. In dealing with Medicare problems having primarily legal connotations, it would seem only logical for the physician to avoid becoming intimately involved.

The Prescribing Of Drugs

While the Hospital Insurance Benefits Program authorizes payment for most services by lumping them together as "services ordinarily furnished by the hospital for inpatients," it is a good deal more specific with respect to drugs and biologicals.

In these categories, payment is authorized for "only such drugs and biologicals, respectively, as are included in the U. S. Pharmacopoeia, the National Formulary, the U. S. Homeopathic Pharmacopoeia, or in New Drugs or Accepted Dental Remedies, . . . or those approved by the pharmacy and drug therapeutic committee of the medical staff of the hospital for use in that hospital."

Of these two options, it seems reasonable to assume that the latter might be preferable in most cases, since a formulary developed by a committee of the hospital staff would be more likely to reflect medical orientation than cost orientation. This is another matter which strongly recommends itself for careful study by the joint conference committee of the staff and the board of directors of each institution that is planning to participate in programs under Part 1-A.

However arrived at, it is clear that the formulary will be an integral part of the institution's contractual agreement with HEW which qualifies it to receive payments for goods and services furnished to Medicare beneficiaries. It will, therefore, be subject to ultimate and final approval by the Secretary.

Should the formulary, as approved by HEW, be broad and comprehensive in scope, the attending physician may anticipate little difficulty in prescribing the pharmaceuticals of his choice. But should the formulary prove to be narrow and restrictive as to selection, the doctor may be placed under pressure to prescribe "Brand X" for the reason that the drug or biological he prefers is not "approved" for payment as a Medicare benefit. Connecticut practitioners have had some experience with restrictive formularies. Several years ago, the Welfare Department issued a "generic drug" directive applying to all patients on public assistance but wisely modified that directive a short time later when members of the profession protested vigorously against it.

Once again, it is suggested that the physician be guided by Section 6 of the *AMA Principles of Medical Ethics* in determining to what extent he can ethically modify his own professional judgment to accommodate non-medical regulations which are imposed primarily to control costs.

It should also be kept in mind that the Medicare Law (like the Welfare Department directive just referred to) does not actually *prohibit the use* of any recognized form of therapy by the practitioner or deny same to the patient. It only *limits payment* for therapy to those forms approved as benefits under the contract between the institution and HEW. On this account, there appears to be no legal reason for the physician to depart from his usual and customary methods of prescribing drugs and biologicals for Medicare patients under Part 1-A provisions, albeit he should keep in mind that patients will be held responsible to pay for such goods and services as are not approved as benefits under Part 1-A contracts with institutional providers. The legal precedents for "direct billings" to the patient when services are not covered have already been referred to on Page 6 of this assessment.

IV. PART 1-B—THE SUPPLEMENTARY VOLUNTARY INSURANCE PROGRAM

Under Part 1-B, the Medicare Law establishes a supplementary "voluntary" insurance program to provide coverage for certain health services (exclusive of that provided under Part 1-A) for individuals age 65 and over who elect to enroll in it. The plan will be financed, on a joint basis, from "premiums" paid by the enrollee ($3 a month) and from general revenues appropriated by the U. S. Treasury (a matching $3 a month). In the case of persons ruled eligible for public assistance (in particular, under the expanded Kerr-Mills Law—Part 2), each state will be authorized to pay the enrollee's share of the monthly premium for him.

The Congress appears to have drafted the provisions of this supplementary program in a rather bizarre manner. It did not, as one might have expected, spell out the coverage it wanted to have included in the contracts and then ask private carriers and prepayment plans to bid competitively on the basis of calculated utilization and costs. Instead, it arbitrarily set the premium to be charged at $6 per month, gave general definition to the intended coverage only as "medical and other services," and turned over to the Secretary of HEW practically absolute control over every important aspect of the program's administration; i.e., enrollment policy, methods of payment, final determination of what will be considered "reasonable costs or charges," and even authorizing him to enter into contracts with insuring agencies without regard to the requirements of law concerning competitive bidding.

From the public's standpoint, little or nothing is known at this writing about what form the contracts under Part 1-B will take when they are finally promulgated. The Law states that they *may* include such items as physicians' services, certain drugs and biologicals, hospital and convalescent services *supplemental* to those covered by Part 1-A, radiation therapy (materials and technicians' services), rental of durable medical equipment, approved private laboratory services, and so forth. In addition, the contracts will feature a $50 annual deductible and 20 per cent co-insurance (both to be paid by the patient).

It is emphasized that these items *may* be included; not *will.* After trained insurance actuaries finish estimating the probable loss ratios for all of this coverage for an admittedly poor-risk group, it remains to be seen how much protection can actually be offered for a fixed premium of $6 per person per month.

Strange as it may seem, however, the fact that there are no contracts-in-being has not deterred the government from starting to enroll the elderly. As of September 1, the Social Security Administration began mailing out "sign-up" cards to nearly 15 million persons age 65 and older, accompanied by a notice that if they do not enroll in the program within a specified period they will have to pay higher premiums or may even be barred from enrollment forever. In some quarters it is felt that such premature solicitation under such promotional pressure has placed the aging in the position of buying sort of a pig-in-a-poke *now*—or else.

From the practitioner's standpoint, the form these contracts will finally take is equally nebulous at this time. Suffice it to say that, whatever carrier or carriers may be selected to act as fiscal agents, the principal authority for administration will rest with the Secretary of HEW in at least two important areas: (a) ruling on the "medical necessity" of any services for which a claim for payment is made, and (b) ruling on the amount of payment that can be made for a service on the basis of *his* determination of "reasonable cost or charge." Some discretion in these matters may be left to the fiscal agents, but the language of the Law suggests that the Secretary will keep his eye on disbursements, through frequent and critical review, and will undoubtedly call a prompt halt to the operation of any plan that is paying providers of services at rates higher than those *he* considers "reasonable." It is being predicted by some that the contracts may end up as "hybrids," embodying selected features of Blue Shield, private insurance, Dependents' Medicare, welfare programs and other existing third party payment plans. It can only be hoped that the *best* features of these plans will be embodied, and that their less desirable features will be excluded.

During its some twenty years of opposition to any but the most limited "social insurance" for health services, the profession has not stressed the economic implications of such a proposal. In other words, protection of the "doctor's pocketbook" has never been advanced by its spokesmen as a reason for keeping medical practice free of government control. With the passage of Medicare, however, the practitioner must face the total picture of Federal intervention—not excepting its potential impact on his right to charge "usual and customary" fees for his services.

Individually and collectively, most physicians have always adhered to the principle of "service benefits" when dealing with patients in modest or reduced circumstances. In earlier times, each doctor tailored his fees to suit each patient's resources—even waiving his fee entirely when circumstances warranted. More recently, the same principle has been extensively promulgated on a group basis through voluntary participation in an ever-increasing number of "substandard payment" programs, both public and private; i.e., Old Age Assistance and others for the indigent, Medical Assistance for the Aged and others for the semi-indigent, and Blue Shield and others for the so-called low income segments of the population. In all such programs, the "service benefits" principle has been applied to accommodate the patient's presumed inability to pay a "usual and customary" fee, whether that inability was felt to be total or only relative.

The Medicare Law has introduced an entirely new factor into the service benefits equation. A group of approximately 20 million Americans has been declared by Congress to be eligible to receive health services at special rates ("reasonable costs or charges") and under special conditions (at taxpayers' expense) *solely* on the basis that they have reached or passed their sixty-fifth birthday. This latest concept of entitlement to service benefits (although the Law omits use of that term) is not just novel—it is a revolutionary "first" in the field of medical economics, and should be recognized as such by every practitioner of medicine.

Whether dealing with Medicare patients or with patients in general, it is doubtful that many doctors would wish to depart from the traditional practice of curtailing or even waiving their fee when, in their judgment, circumstances seem to warrant such action. Conversely, however, it is equally doubtful that any significant number of physicians really feel it is incumbent upon them to so adjust their normal charges when the patient's ability to pay is *not* in question—but only his age or some other not necessarily relevant factors. Yet, from published reports, it appears likely indeed that this is exactly what government planners hope to bring about under Part 1-B contracts.

Some of Medicare's principal architects are insisting that in order to make the deductible ($50) and co-insurance (20 per cent) features of the program "meaningful" to enrollees, it will be necessary for HEW to seek to place a limit on the maximum liability of the government to pay its 80 per cent of the "reasonable costs and charges" made by providers for rendering the covered services. The American Medical Association's plea that this liability be measured on "usual and customary" charges was turned down by Congress, and it will therefore be surprising if most payment schedules promulgated for Part 1-B contracts are not of the fixed variety.

Fixed payment schedules are practically synonymous with "service benefits," and if HEW carries out its reported present thinking the plan might produce results such as the following: A physician's "usual and customary" fee for a service is $100, but HEW's estimate of 80 per cent of a "reasonable charge" for the service in that area turns out to be only $60. As a consequence, the patient will be liable for (but not necessarily disposed to pay) twice his supposed contractual 20 per cent of the doctor's bill; i.e., $40 instead of $20. When asked about this possibility recently, HEW Undersecretary Wilbur J. Cohen suggested that the disparity was something that would "probably have to be worked out by the patient and the physician, presuming that the patient was willing to pay the difference."

Many experts are suggesting that the determination of "reasonable costs and charges" in the different states and their subdivisions be made by HEW on the basis of some prevailing schedule in each area, such as that of the local Blue Shield plan. Thus, by taking 80 per cent of the Blue Shield payments listed in the existing local schedule, the government's co-insurance liability can be derived for that area with a minimum of effort.

In attempting to assess the logic of this approach, and the probable consequences of its use, one can only fall back on experience. The keystone of most Blue Shield schedules is that the payments be substandard so that the low-income subscriber can purchase the contract at the smallest possible cost. It is well known that in different sections of an area served by a Blue Shield plan, there may be marked differences of opinion among practitioners as to what realistic relationship exists between these substandard payments and normal charges. In one section, the payments may be looked upon as full fee-equivalents. In another section, the payments may be evaluated at 50 per cent or less of usual and customary fees for many services. Hence, it seems quite unlikely that the approach to Part 1-B contract development said to be currently under consideration by HEW will produce a program which is more than one cut, if any, above the type common to most public assistance (welfare) plans.

Pending revelation of the ultimate interpretation given by HEW to the provisions of Part 1-B, it appears that the physician will be granted the legal right to continue to assess his charges on a usual and customary basis for Medicare cases, unless he elects to do otherwise through the medium of accepting "assignment of benefits" from the patient. As presently understood, if the doctor wishes to be assured of this "cash-on-the-barrelhead" type of payment for Medicare work he can obtain such assurance *provided* he agrees, in writing, to accept the scheduled payment as "in full" and waives his right to collect from the patient the 20 per cent co-insurance balance for which the latter would ordinarily be liable.

On the other hand, if he so chooses, the Law also appears to grant him the right to bill his patient for the fee they have mutually agreed upon, thereby allowing the patient, rather than himself, to be reimbursed *directly* by the government or its fiscal agent. Such a practice is followed at the present time in many parts of the country, a practice which has its foundation in the concept of INDIVIDUAL RESPONSIBILITY in the patient-physician relationships. The purpose of IR is to keep separate and distinct the agreements which are entered into voluntarily by (1) the patient and the physician and (2) by the patient and an insuring agency, whether private or public. In this way, the obligations of all concerned are kept on a two-party basis, and the patient does not become confused by the intervention of a third party in either of these quite different agreements.

What choice the practitioner will make in this matter will probably depend on many considerations. When the Part 1-B contracts finally become available for examination, he will certainly be interested to learn what the specific terms of the contracts are and what options, if any, may be offered him. But, above all, he should keep firmly in mind that the choice is his alone—certainly not that of the government or his medical societies—and that he is free to choose on the basis of what *he* determines to be most appropriate to his patient's needs and circumstances, and most conducive to his rendering a high quality of medical care to those he serves.

Several years ago (1963) the House of Delegates of the Connecticut State Medical Society adopted a policy statement titled: "Certain Policies of CSMS Re Inter-Relationships Between the Patient, the Physician and Third Party Entities." These policies do not have any legal status, of course, but some of them may prove helpful to members in evaluating Part 1-B Medicare contracts from the standpoint of the practicing physician. The 1963 document is reproduced in full under Appendix B (Page 17), but several pertinent sections are reproduced herewith:

I. *Definition of a Third Party:* Within the framework of medicine and its practice, a Third Party is defined as any authorized entity which enters into or influences the two party patient-physician relationship.

III. *Definition of CSMS Policies re the Patient-Physician Relationship:* The Connecticut State Medical Society acknowledges and endorses the principle of INDIVIDUAL RESPONSIBILITY as the only practical basis for the continuation of free enterprise in the private practice of medicine, and for the preservation of the patient-physician relationship.

This principle of INDIVIDUAL RESPONSIBILITY is defined in terms of the privileges and the responsibilities of the patient and the physician as (in part) follows:

A. *Of the Physician*

(3) The physician shall be responsible for rendering to every patient under his care the best medical advice and/or treatment available and customary in the community area of his practice.

(4) The physician shall be responsible for explaining the nature and amount of his professional charges for the care of the patient.

(7) The physician shall *share* with the patient (and the patient with the physician) the responsibility for discussing the roles any third parties may play in any aspect of their patient-physician relationship, and for arriving at a mutually satisfactory agreement as to what roles, if any, such third parties are to play in any aspect of their individual responsibilities to each other.

B. *Of the Patient*

(1) The patient shall have freedom to choose his physician.

(3) The patient (or his legal relative or guardian) shall be responsible for payment of the physician's fee.

V. *Definition of General Responsibilities of CSMS as a Third Party Entity:* (3) . . . assure that the Society refrains from making statements, endorsements, agreements or the like concerning any third party payment system which would, or might appear to, commit any of its members to accepting *involuntarily* a fixed schedule of payments for their professional services.

V. TITLE XIX OF PART 2—THE EXPANDED PROGRAMS OF PUBLIC ASSISTANCE

Part 2 of P. L. 89-97 creates a new Title XIX for the broad general purpose of expanding and supplementing all existing programs of public assistance for health services which are financed on a shared basis by the Federal government and participating states, and of furnishing tax-supported coverage for several new programs in the fields of tuberculosis, mental disease and rehabilitation.

The scope of this legislation is so vast, and the details of its proposed *modus operandi* so complex, that it is clearly beyond the competence of any but bureaucratic experts to interpret their immediate and long-range significance.

In effect, it appears that Title XIX will *permit* states to combine all public assistance medical programs under one gigantic umbrella until December 31, 1969, and, thereafter, make it *mandatory* for them to do so if they wish to continue to qualify to receive Federal funds. Hence, it seems likely that the trend will be to put on a uniform footing such diverse existing programs as Old Age Assistance, MAA (Kerr-Mills), Aid to Dependent Children, Aid to the Blind, Aid to the Disabled and sundry others.

The full impact of this combining and homogenizing of programs will probably not be felt for several years to come, nor will the precise terms on which physicians will be invited to participate be known. Unless history is reversed, however, it may be anticipated that the so-called "new" arrangements will have a distinct welfare-type orientation about them, and retain most of the *old* features with which most doctors have become so familiar; i.e., substandard payments for all providers of services, cost and utilization controls, regulations by directive, endless forms and certificates to be completed, and so forth.

The Society takes no position on, and makes no predictions about, how well or how poorly this blanket approach will meet the medical needs of the people concerned. Based on the past advisements of its members on welfare matters, however, it may be best for everyone to await the implementation of Title XIX with the time-honored adage in mind that "he who expecteth nothing shall not be disappointed."

VI. SUMMARY

In the preparation of this assessment of the professional implications of P. L. 89-97, every effort has been made to keep the presentation both factual and objective. It would not be quite truthful, however, to claim that it is intended merely to inform. It is also intended to stimulate serious thinking about a matter of major importance. The leadership of the Connecticut State Medical Society feels strongly that continued freedom of the physician to make medical decisions on a strictly medical basis is an ideal worth preserving and not one to be relinquished by default. As stated in the preface to this document, the leadership believes that the proven guiding principles which have carried American medicine to its present high level of achievement must not be abandoned or even seriously compromised as a consequence of Medicare's enactment in 1965. To advance this purpose, and to act responsibly toward the public, it cannot recommend that practitioners willingly submit to domination by government, *if such should ever be attempted,* or willingly allow Federal regulation of *other* providers of health services to bring about deterioration in the quality of medical care received by patients for whom they are legally and morally responsible to do their very best.

Just as Section 1801 of the Law disclaims Federal authority or intent to interfere with the practice of medicine or the manner in which medical services are provided, just so does the governing body of the Society disclaim authority or intent to prescribe any single approved course of conduct for physicians operating in the new climate of Medicare or one which differs in the slightest degree from the course that physicians have developed for themselves over the centuries, through a voluntary process of individual and collective self-discipline.

In his office, by the bedside, and at the operating table, each privately practicing doctor is the master of his own ship. He willingly subjects the quality of his work to evaluation by a jury of his peers, but his peers are not in any way privileged to control his mind or dictate to his conscience. To do what is best for the patient is the common goal, but the approaches to that objective are not necessarily all of a kind. Hence, since the various facets of the Medicare Law will undoubtedly be viewed differently by different physicians, it is clear that each one must decide for himself to what extent he will elect to become directly involved in these basically two-party contracts between the Federal government and the elderly. This is his right, but it is also his responsibility, and for him to procrastinate in making this important decision — *after* he has studied the terms of involvement—may well contribute to his own disadvantage and to that of his patients.

Before President Johnson put extreme pressure on Congress, and the enactment of Medicare began to appear certain, the profession did not stand alone at the bar of legislative justice. Many were those from other health fields who stood at its side, year after year, sharing the trying task of attempting to convince legislators that medicine and politics should not be mixed on any but a very limited scale. For the most part, the arguments of the others were also our arguments; in the main, their warnings of the dangers of Federal interference in patient care were the same as our own.

But when political prognosticators began to assess Medicare's passage as imminent, a strange metamorphosis appeared to take place among quite a few—in fact, most—of our former comrades in arms. There is no useful purpose to be served in pointing a finger at any particular group or groups of these previous opponents of P. L. 89-97 and its predecessors, or in suggesting that their changing of position was in any way improper, but the fact is that when they thought they saw the writing on the wall, they rushed before the committees of Congress to protect their vested interests. In gambling parlance, they pleaded to be given "a piece of the action." They were being realistic, they said; it was foolhardy to make further effort in a losing cause.

In the mad dash in quest of real or imagined economic salvation which took place, only organized medicine remained aloof and stuck to its guns to the bitter end. Some members have been critical of this last-ditch stand, and it must be confessed that the profession's intransigence was unsuccessful in saving the day. But it may be said with a small measure of warranted pride that the AMA's steadfastness has not gone entirely unrewarded. To be sure, it gained nothing for itself, but it may have salvaged something of value for every private practitioner.

As the Law was finally enacted, *all* providers of health services will be allowed to participate in the Medicare program, but *only* physicians may do so without having to become legal parties to any of its contracts. The others, including insurance carriers, will have to sign binding agreements with the Secretary of HEW to be permitted to furnish services to the elderly, and to "negotiate" the terms of their reimbursement and other conditions of participation with him. Hence, the doctor is the sole provider of services who may choose to confine his allegiance and responsibility *to the patient,* unless he elects to do otherwise, since Section 1801 of the Law clearly prohibits interference in medical practice by the Federal government, its officers, or its employees. This legally-defined freedom may prove to be a real "plus" to the privately practicing M.D.

While some may argue to the contrary, it appears that the autonomy now enjoyed by the directors of local hospitals and related facilities, local insurance carriers and prepayment plans, and other local voluntary health agencies is almost sure to be usurped in some degree by HEW, through the contractual arrangements which must be made. It can only be hoped that the degree of such usurpation will never become so great that these local providers are hampered in their efforts to maintain and constantly improve the quality of patient care in thousands of separate communities all across the country. American medicine has long contended that Federal control on a massive scale would bring about deterioration in the quality of health services. It remains to be seen whether this danger can be avoided, now that Federal control is coming to pass.

As has been stressed throughout this presentation, if the Medicare Law is implemented entirely within the meaning of Section 1801, it may prove possible for most physicians to elect to become involved in its programs without significant reservation. If, on the other hand, the government should give P.L. 89-97 a strict, narrow interpretation, imposing rule upon rule to control its costs, it may be that some practitioners will feel driven to exercise the only recourse presently known; i.e., to decline to accept Medicare cases. The Legal Department of the AMA has suggested, in fact, that this may prove to be the only way to be sure of completely avoiding all potential difficulties with the Law. Such a "negative" action would be ethical, of course, since the *AMA Principles* (Section 5) state: "A physician may choose (except in an emergency) whom he will serve."

But that such an all-or-none choice would sit well with a practitioner's conscience—or sit with it at all—is extremely doubtful, at least for most. For decades, American farmers have been made to suffer sharp twinges of conscience as a result of Federal agricultural policy—the policy of *not* growing things or of plowing under the fruits of their labor. Without question, a great many doctors would be similarly disturbed if they were forced, by the stringencies of a law, to *not* practice medicine and to *not* be true disciples of Hippocrates.

Yet it cannot be denied that among the nation's practitioners today there is apprehension that this might come about, or that there still remains a burning desire to keep medical judgments free of bureaucratic control. The somewhat hard-to-define concept of "non-participation" has gained considerable support in some quarters, but has aroused considerable antagonism in others. When the proponents of this concept debate with its opponents, however, it is evident to the listener that their purpose is exactly the same; that it is only the term "non-participation" about which they differ.

Perhaps "non-control" could be considered more descriptive of what is *really* being sought by almost all members of the profession, since, even when discussions are heated and uninhibited, one hears no talk at all of turning away Medicare patients, or of acting in any way which might tend to deprive them of entitlement to any benefits the government has promised to deliver. The talk is only about *control,* and the deep-seated fear thereof.

Quite a number of medical experts agree that the primary purpose and primary effect of Medicare regulations will be to limit the costs of the programs; *not* to raise the standards of patient care for the elderly. With considerable justification, they point out that this purpose is common to most government programs which profess to seek social betterment—especially at the Federal level. For some strange reason, they say, it always seems to turn out that while it is entirely prudent to spend tax dollars in profligate abundance to create and expand the bureaucracy which will administer each new program, it is frowned upon as highly imprudent to allow more than a trickle of tax funds to emerge at the far end of the cornucopia—the place where the promised benefits of the program are supposed to be delivered to the people. Hence, just to help the elderly to establish their eligibility for health services under Medicare—*not* to improve their health one iota, the Social Security Division of HEW is opening 71 new branch offices and 21 "temporary" centers all across the nation, which will *supplement* the efforts of over 600 district offices already in existence. It is useless to speculate how many additional employees will have to be hired to man these stations, or what the administrative costs will be, but it may cause physicians to smile wryly to learn that the objective of this bureaucratic expansion is to assure "the same *high quality* of direct service to the public that has been given over the past thirty years." Comparisons are sometimes odius, but the realist may find food for thought in contrasting this latest venture of the Social Security Administration with a far more modest plan to increase payments to hospitals for the care of welfare patients, recently authorized by the State of Massachusetts. According to an HEW news release, the former action is noble in its purpose because 'high quality" of service is involved. In the latter instance, however, the increase in rates was challenged by prominent Bay State politicians on the grounds that it constituted "robbing from the public till" and "spending . . . the taxpayers' money illegally."

The stated objective of this assessment was to reaffirm and redefine for members of the Society the principles of medical ethics which have guided physicians so well in the past, and to relate those principles to the known professional implications of the new Medicare Law. It is hoped that this mission has been accomplished in a reasonably meaningful way, although it may be years before the total story of Medicare can be written.

Emphasis has been placed throughout on the fact that each physician must arive at decisions concerning all aspects of this omnibus legislation *independently; not* in formal concert with his colleagues or his medical organizations. P.L. 89-97 is a law, and its legal implications may prove to be of even greater moment than its professional ones. Vast administrative powers have been given to the Secretary of Health, Education and Welfare, and his authority appears to be almost unlimited. It is possible that some of this power and authority will be transferred to those who act as his fiscal agents and to providers of health services who enter into contracts with him. Thus, it could turn out that the physician, who normally heads up the medical team in the care of the patient, might find himself near the foot of the ladder when matters of regulation are given legal interpretation.

In the past, the Society and its component county associations have tried to protect the proper interests of both the physician and the patient when professional conduct has been placed in question. It is the firm intention of the Society to continue to provide this important service and, by so doing, to preserve the status of the patient-physician relationship and promote the highest quality of medical care for the people of Connecticut. Section 1801 of the Medicare Law appears to assure that medical discipline will remain in professional hands as an integral part of the "manner in which medical services are provided" by the physician.

APPENDIX A

CERTAIN CONCEPTS OF THE CONNECTICUT STATE MEDICAL SOCIETY RE MEDICARE

In an effort to "capsulize" certain portions of the foregoing assessment, and to tie these in with pertinent actions taken by the AMA House of Delegates (October 2-3, 1965) and with related policy statements from national and local sources, the following broad considerations and objectives are offered to members of the Society as information:

(a) Emphasis is placed on the fact that the legal parties to all types of Medicare contracts are, by law, only *two* in number; i.e., the Federal government and the persons ruled eligible to receive covered health services at taxpayers' expense. The election to become a legal third party to any such contracts by the providers of health services is ostensibly entirely voluntary under P.L. 89-97. So far as is now known, physicians may participate in Medicare programs without entering into formal agreements of any kind.

(b) In precise and presumably unmistakable language, under the featured heading of *"Prohibition Against Any Federal Interference,"* Title XVIII, Section 1801, declares: *"Nothing* in this title (Health Insurance for the Aged) shall be construed to authorize *any* Federal officer or employee to exercise *any* supervision or control over the practice of medicine or the manner in which medical services are provided. . . ."

This apparently unqualified disclaimer of Federal interference in the practitioner's usual and customary methods of rendering medical care to his patients appears to be in perfect accord with Section 6 of the *AMA Prinicples of Medical Ethics,* which reads:

"A physician should not dispose of his services under terms or conditions which tend to interfere with or impair the free and complete exercise of his medical judgment and skill or cause a deterioration of the quality of medical care."

(c) The Judicial Council of the AMA has ruled that, under ordinary circumstances, the individual physician, acting independently, is ethically free to select his patients. As the Medicare Law is presently understood, he may choose any of the following options: (1) He may decline to render medical services to persons covered by the "Health Insurance for the Aged Act." (2) He may elect to treat such persons without charge. (3) He may treat such persons with the advance understanding that he will look to them exclusively for payment for his services, and that he either will or will not assist them in any way to obtain reimbursement from any Federally designated intermediary for the cost of his services or the costs of associated services.

(d) Concerning institutional admitting and discharging procedures under Part A of P.L. 89-97, the Society endorses the policy of the AMA (adopted October 3, 1965): "Current practices and procedures with respect to certification for hospital (and related facilities) admission and care should be continued under P.L. 89-97." The Society recommends that any of its members who serve in an advisory capacity to any agency concerned with the implementation of Part A (Hospital Insurance Benefits) in Connecticut seek to accomplish this objective, as AMA advisors to HEW will be doing nationally.

(e) While it is not yet known how flexible or rigid the regulations for the operation of hospital utilization review committees under Medicare will be, when finally promulgated, it is the judgment of the Society that such committees should be composed only of practicing physicians and, wherever possible, only of practicing physicians on the staff of each institution concerned. It is the further judgment of the Society that the first and foremost function of such committees should be to protect the best *medical* interests of Medicare patients.

(f) In evaluating for themselves all types of Medicare contracts, members of the Society are urged to study carefully the document titled: *"Certain Policies of CSMS re Inter-Relationships Between the Patient, the Physician and Third Party Entities,"* which was adopted by the CSMS House of Delegates in April, 1963. (Appendix B, Page 17).

(g) Physicians should fully understand the merits and limitations of billing patients directly for services, or accepting assignment to enable payment by a federally designated fiscal intermediary, so that they can decide for themselves in each instance the method of compensation which they prefer.

(h) Concerning the so-called "hospital based" medical specialties (pathology, radiology, anesthesiology and physiatry), the Society stands ready to support, on request, any position adopted by its members who practice these specialties which is in keeping with the recommendations of their national boards and colleges concerning billings for services rendered to Medicare patients. In general, the Society subscribes to the policy adopted by the AMA House of Delegates (October 3, 1965) which reads: "Hospital-based medical specialists are engaged in the practice of medicine. The fees for the services of such specialists should not be merged with hospital charges. The charges for the services of such specialists should be established, billed and collected . . . in the same manner as are the fees of other physicians."

(i) With respect to review of disputes between physicians and Federally-designated fiscal intermediaries (insurance or prepayment carriers) concerning fees, the Society subscribes to the policy adopted by the AMA House of Delegates (October 3, 1965) which reads: "In the event of (such disputes) with respect to reasonable, customary, or usual fees, such disputes should be resolved with the participation of the appropriate local medical society."

(j) The Society believes it will be rewarding to physicians and their professional organizations if, in dealing with Medicare problems and Medicare agencies, certain earlier adopted policies of the AMA House of Delegates are referred to for guidance. Several of the most important of these are reproduced herewith:

The Bauer Amendment

(Adopted 1961)

"The House of Delegates of the American Medical Association records its opposition to any legislation of the King-Anderson type. Its opposition is based on the facts that such legislation does not meet the needs of the situation; interferes with the doctor-patient relationship; interferes with the rights of doctors employed in hospitals; is inordinately expensive; leads inevitably to further encroachments by government into medical care; results eventually in a deterioration of type of medical care rendered the public; and is therefore detrimental to the public interest.

"The House of Delegates invites attention to the fact that the medical profession is the only group which can render medical care under any system and that the medical profession is best qualified to determine how the best medical care can be delivered.

"The House of Delegates believes that the medical profession will see to it that every person receives the best available medical care regardless of his ability to pay, and it further believes that the profession will render that care according to the system it believes is in the public interest and that it will not be a willing party to implementing any system which we believe to be detrimental to the public welfare."

Nine Principles For Standards Of Health Care Programs

(Adopted 1965)

1. No person needing health care shall be denied such care because of the inability to pay for it.
2. It is appropriate that government revenues be used to finance health care when other resources have been found to be inadequate.
3. Every level of government, municipal, county, state and federal, should assume a responsible share in the financing of such programs.
4. The health care provided by such programs should be adequate and should be equal to that available to those who can afford to pay.
5. Maximum use should be made of voluntary prepayment and insurance mechanisms.
6. Administration of such programs should be the responsibility of the state government. Participating states should be required to meet adequate standards of administration in order to qualify for federal funds.
7. Eligibility requirements for benefits should be fair, realistic, uncomplicated and practical.
8. Any such health care programs should provide funds only, and not direct services.
9. Funds for such programs may come from general tax revenues and not from social security taxes.

APPENDIX B

CERTAIN POLICIES OF THE CONNECTICUT STATE MEDICAL SOCIETY RE INTER-RELATIONSHIPS BETWEEN THE PATIENT, THE PHYSICIAN AND THIRD PARTY ENTITIES

(A Report Of The Council, Adopted By The House Of Delegates, April 30, 1963)

SCOPE

I. Definition of a Third Party, within the framework of medicine and its practice.
II. A general categorization of certain Third Party entities.
III. Definition of responsibilities of the patient and the physician in the traditional patient-physician relationship.
IV. Definition of certain policies with respect to the physician's fee, and methods of payment thereof by the patient and/or Third Parties.
V. Definition of certain general responsibilities of the Connecticut State Medical Society as a Third Party entity.
VI. Conclusions.

I. DEFINITION OF A THIRD PARTY

Within the framework of medicine and its practice, a Third Party is defined as any authorized entity which enters into or influences the two party patient-physician relationship.

II. CATEGORIZATION OF THIRD PARTY ENTITIES

A comprehensive, but not necessarily complete, categorization of Third Party entities follows:

A. Governmental

Federal

1. Department of Health, Education and Welfare
    a. Merchant Seamen
    b. American Indian Service
    c. Quarantine—Ports of entry of aliens
2. Department of Defense
    a. Military medical care
    b. "Medicare" for dependents of military personnel
    c. Veterans Administration medical programs
3. Department of Labor
    a. Occupational health services for Federal employment-connected illness or injury

State

4. Departments of Health, Education and Welfare
    a. Welfare medical care programs such as OAA and MAA
    b. School medical services and programs
    c. Vocational and rehabilitative programs
    d. Public health and preventive medicine programs
    e. Medical Examining and Licensing Boards

Local

a. Local welfare department health services
b. Local health ordinances and program
c. School programs—dental examinations, vision testing, etc.

B. Non-Governmental

Insurance, Voluntary

1. Private carriers
    a. Purchased by policyholder directly from carrier or agent
    b. Purchased for policyholder by union or employer from carrier
    c. Purchased for beneficiary by governmental agency from carrier
2. Prepayment Plans (Blue Shield and Blue Cross, etc.)
    a. Purchased by policyholder directly from plan or agent
    b. Purchased for policyholder as member of group
    c. Purchased for beneficiary by governmental agency

Benevolent And Charitable Agencies

HOSPITALS

1. General community hospitals
2. Private hospitals
3. State-owned institutions

MISCELLANEOUS

1. Organizations—Medical Societies, Hospital Associations, etc.
2. Personal—A patient's relatives, friends, guardians, etc.

III. DEFINITION OF CSMS POLICIES RE THE PATIENT-PHYSICIAN RELATIONSHIP

In order to formulate policies of the Connecticut State Medical Society which will apply to situations involving a *third party,* it is necessary to re-affirm or give definition to certain policies which do, or should, apply to the *two parties* involved in the long-established relationships which exist between the patient and the physician.

The Connecticut State Medical Society acknowledges and endorses the principle of INDIVIDUAL RESPONSIBILITY as the only practical basis for the continuation of free enterprise in the private practice of medicine and for the preservation of the patient-physician relationship. This principle of INDIVIDUAL RESPONSIBILITY is defined in terms of the privileges and responsibilities of the patient and the physician as follows:

A. Of The Physician

1. The physician shall have freedom to accept or not to accept a patient for medical advice and/or treatment. In keeping with humanitarian principles, and under unusual circumstances, the physician is expected to voluntarily set aside this freedom.
2. The physician shall be responsible for making reasonable explanation of the patient's condition of health or illness to the patient or to his legal relative or guardian.
3. The physician shall be responsible for rendering to every patient under his care the best medical advice and/or treatment available and customary in the community area of his practice.
4. The physician shall be responsible for explaining the nature and amount of his professional charges for the care of the patient.
5. The physician shall be responsible for providing continuity of medical care to every patient currently accepted by him for medical advice and/or treatment, and for assuring reasonable continuity of such care to such patient in his absence.
6. The physician shall be free, and responsible, to inform the patient of his intention to terminate their patient-physician relationship. The physician shall allow the patient a reasonable period of time in which to make other arrangements for his medical care, and shall provide the new physician with pertinent medical information concerning the patient.
7. The physician *shall share with the patient* the responsibility for discussing the roles any third parties may play in any aspect of their patient-physician relationship, and for arriving at a mutually satisfactory agreement as to what roles, if any, such third parties are to play in any aspect of their individual responsibilities to each other.
8. The physician shall be responsible for completing for the patient such *reasonable* claim forms as may be required by third party payment agencies, and for preparing and furnishing, *at appropriate cost,* such *other* statements or certificates concerning the patient's health status as may be requested by the patient or by persons or agencies authorized by the patient to obtain such documents from the physician.

B. Of The Patient

1. The patient shall have freedom to choose his physician.
2. The patient shall be free, and responsible, to inform the physician whose care he is under that he is discontinuing or intends to discontinue acceptance of that physician's medical advice and/or treatment.
3. The patient (or his legal relative or guardian) shall be responsible for payment of the physician's fee.
4. The patient *shall share with the physician* the responsibility for discussing the roles any third parties may play in any aspect of their patient-physician relationship, and for arriving at a mutually satisfactory agreement as to what roles, if any, such third parties are to play in any aspect of their individual responsibilities to each other.

IV. DEFINITION OF CSMS POLICIES RE THE PHYSICIAN'S FEE AND METHODS OF PAYMENT THEREOF

The Connecticut State Medical Society endorses policies concerning the physician's fee and methods of payment thereof as follows:

A. The Physician's Fee

It shall be the policy of the Connecticut State Medical Society that:

1. Each licensed practitioner of medicine possesses the inalienable right to determine for himself the fee he will charge for each professional service he renders to his patients.
2. The physician is responsible to set his fees at levels which are, in the community area of his practice, reasonable and proper relative to the services he renders, and for explaining the amount and nature of his fees to the patient and to any party legitimately concerned with his rendering of services.
3. When the physician's fee is questioned by a party legitimately concerned with his rendering of a service to a patient, the question shall be reviewed and ruled upon *only* by a properly

authorized committee of the local or county medical society of which the physician is a member. On appeal, such questions may also be reviewed and ruled upon by a properly authorized committee of the State Medical Society.

4. The fee of the individual physician shall be charged to the patient separately and be distinct from any charges made by others which may be associated with a service rendered by him, including the fees of physicians furnishing consultative or concurrent medical care to the patient.

B. Methods Of Payment Of The Physician's Fee

It shall be the policy of the Connecticut State Medical Society that payment of the physician's fee may be made by any one or combination of the following methods:

1. *Direct Full Payment:* The patient (or his legally responsible relative or guardian) shall make full payment of the physician's fee directly to the physician.
2. *Third Party "Payment-in-Full" (Service Benefits):* If the physician has entered into an agreement to do so with an insuring agency or other third party payor, he shall accept a direct payment made to him by that agency or payor as "payment-in-full" for the service he has rendered to the patient.
3. *Third Party "Indemnity" Payments:*
   a. When one or more third party agencies directly indemnifies a physician on behalf of his patient, and the total of such indemnity payment (s) is a *lesser amount* than the fee agreed upon with the patient or which is reasonable and proper in relation to the service rendered, the patient (or his legally responsible relative or guardian) shall fulfill the patient's individual responsibility by paying the balance remaining directly to the physician.
   b. When the total of third party indemnification paid directly to the physician is *greater than* the fee agreed upon with the patient or which is reasonable and proper in relation to the service rendered, the physician shall remit to the patient that portion of such indemnity payment (s) paid directly to him which is in excess of such fee.

C. Direct vs. Indirect Payment By Third Party Agencies

It shall be considered sound practice by the Connecticut State Medical Society for a third party agency to make benefit payments on behalf of a patient directly to the physician, either as a condition of a contract or upon assignment of payment to the physician by the policyholder.

D. Utilization Of Third Party Payments

It shall be the policy of the Connecticut State Medical Society that the primary purpose of third party payment mechanisms is to assist the patient in paying all or part of the physician's fee for a service rendered. Both parties to the patient-physisian relationship shall share the responsibility for preventing, identifying and prosecuting instances of abuse of this purpose.

V. DEFINITION OF GENERAL RESPONSIBILITIES OF CSMS AS A THIRD PARTY ENTITY

It is recognized that the role of third parties in the patient-physician relationship may extend into many areas other than full or partial payment of the physician's fee. The Connecticut State Medical Society, itself, is one of the most important of third party entities and, as such, assumes certain general responsibilities in the areas of medical education, medical practice, medical discipline and medical economics, among others. As a matter of continuing policy, the Society shall engage in appropriate activities to carry out these responsibilities as follows:

1. To undertake meaningful programs of education of the public as to the charactertisics and value of realistic personal and family voluntary health insurance coverage, and, in cooperation with health insurers and others, promote the concept, that, in a free society, obtaining and providing for the payment of medical care are primary responsibilities of the individual citizen.
2. To freely consult with all agencies which desire to provide health service coverages, whether such agencies operate in the private, charitable or governmental sector of the economy, for the purpose of advising them concerning those provisions of a third party system which will best serve the patient and the physician in fulfilling their individual responsibilities to each other.
3. To assure that the Society refrains from making statements, endorsements, agreements or the like concerning any third party payment system which would, or might appear to, commit any of its members to accepting *involuntarily* a fixed schedule for their professional services.
4. To continue to advise its members concerning the characteristics of various existing and pro-

posed third party payment systems, and to recommend to its members that, as a matter of personal conscience, they accept individual responsibility for participating in only those systems under which professional freedom and high quality medical care for the patient are assured.

5. To defend the rights of its members to practice their profession and dispose of their services voluntarily, under conditions which are ethical and free from regulation or control by lay persons.
6. To resist the encroachment of hospitals into the practice of medicine; to seek to eliminate the practices of third party payors of making payments to hospitals for physicians' services, and to urge industry, labor and third party entities to cooperate in providing health insurance coverage to the public which will keep clear the important distinction between doctor care and hospital care.
7. To defend the right of its members to enjoy the privilege of hospital staff appointment under circumstances wherein such appointments are made and retained on the basis of criteria for same adopted by the House of Delegates on May 2, 1962. These criteria are:
    a. Good moral character and high ethical standards, as determined by State Medical Examining and Licensing Boards, membership in organized medical associations and/or other authorized medical agencies.
    b. Professional competence, as determined by these same agencies.
    c. Willingness to participate as a staff member in either teaching, research or community service programs.
    d. Willingness to abide by the hospital rules which govern the professional conduct of staff members.
8. To assist in the prevention and/or correction of abuse or fraud in the financing of medical services.

VI. CONCLUSIONS

It is recognized that this Report constitutes only a beginning toward establishing sound guidelines which may prove useful to the Society and its members as one means of preserving the private practice of medicine in America and of sustaining the important principle of INDIVIDUAL RESPONSIBILITY in the patient-physician relationship. It is not implied that the broad Third Party principles and policies herein defined are either complete or permanent, or that they will not require continuing study and re-evaluation in the years to come.

APPENDIX C

THE AMA PRINCIPLES OF MEDICAL ETHICS

Preamble: These principles are intended to aid physicians individually and collectively in maintaining a high level of ethical conduct. They are not laws but standards by which a physician may determine the propriety of his conduct in his relationship with patients, with colleagues, with members of allied professions, and with the public.

Section 1—The principal objective of the medical profession is to render service to humanity with full respect for the dignity of man. Physicians should merit the confidence of patients entrusted to their care, rendering to each a full measure of service and devotion.

Section 2—Physicians should strive continually to improve medical knowledge and skill, and should make available to their patients and colleagues the benefits of their professional attainments.

Section 3—A physician should practice a method of healing founded on a scientific basis; and he should not voluntarily associate professionally with anyone who violates this principle.

Section 4—The medical profession should safeguard the public and itself against physicians deficient in moral character or professional competence. Physicians should observe all laws, uphold the dignity and honor of the profession and accept its self-imposed disciplines. They should expose, without hesitation, illegal or unethical conduct of fellow members of the profession.

Section 5—A physician may choose whom he will serve. In an emergency, however, he should render service to the best of his ability. Having undertaken the care of a patient, he may not neglect him; and unless he has been discharged he may discontinue his services only after giving adequate notice. He should not solicit patients.

Section 6—A physician should not dispose of his services under terms or conditions which tend to interfere with or impair the free and complete exercise of his medical judgment and skill or tend to cause a deterioration of the quality of medical care.

Section 7—In the practice of medicine a physician should limit the source of his professional income to medical services actually rendered by him, or under his supervision, to his patients. His fee should be commensurate with the services rendered and the patient's ability to pay. He should neither pay nor receive a commission for referral of patients. Drugs, remedies or appliances may be dispensed or supplied by the physician provided it is in the best interests of the patient.

Section 8—A physician should seek consultation upon request; in doubtful or difficult cases; or whenever it appears that the quality of medical service may be enhanced thereby.

Section 9—A physician may not reveal the confidences entrusted to him in the course of medical attendance, or the deficiencies he may observe in the character of patients, unless he is required to do so by law or unless it becomes necessary in order to protect the welfare of the individual or of the community.

Section 10—The honored ideals of the medical profession imply that the responsibilities of the physician extend not only to the individual, but also to society where these responsibilities deserve his interest and participation in activities which have the purpose of improving both the health and the well-being of the individual and the community.

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